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California's Computer Magazine

April 4 - May 1, 1986

# MicroTimes

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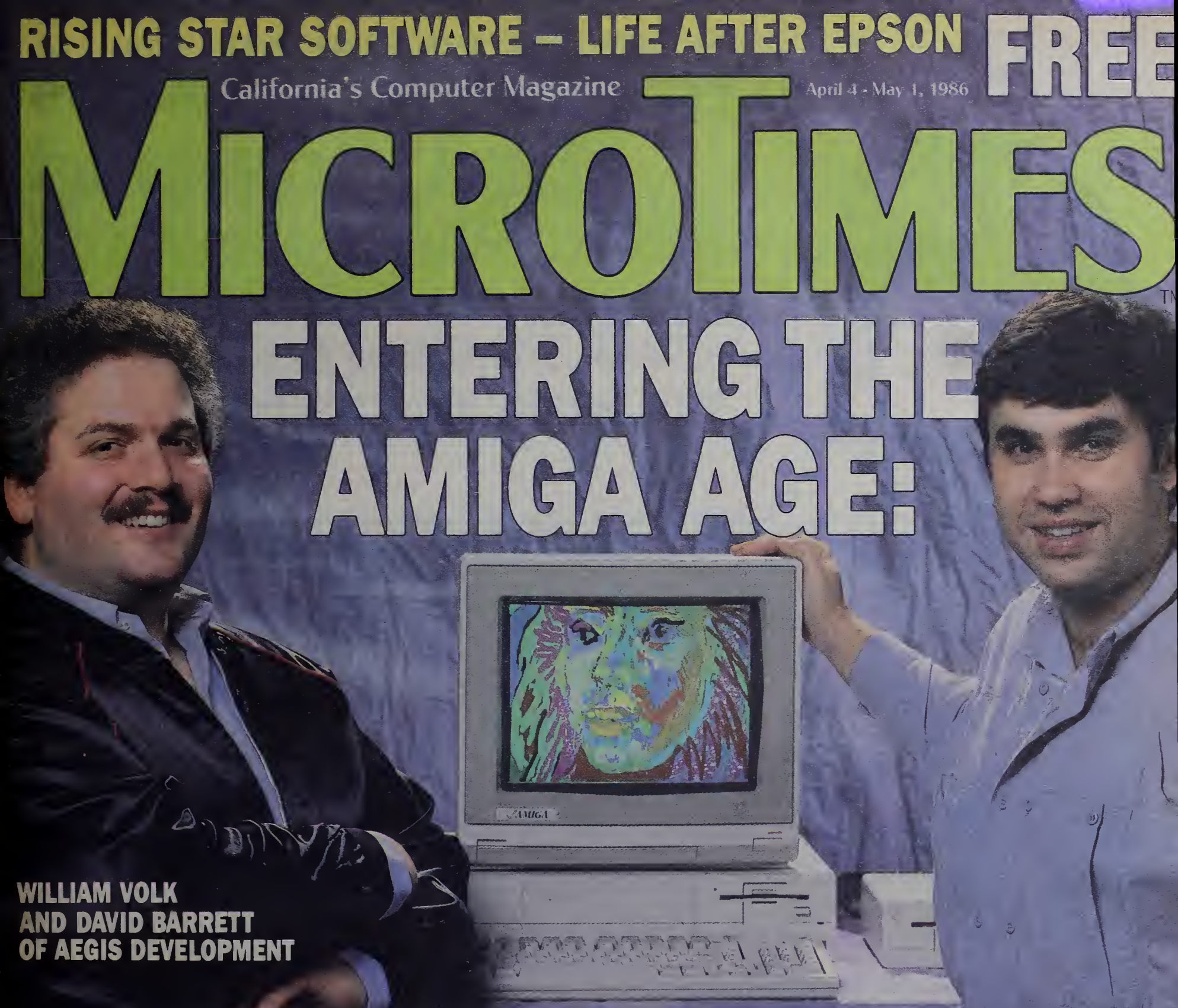


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SMALL BUSINESS AND COMPUTERS,
MACINTOSH, AMIGA/COMMODORE

***REVIEWS:***
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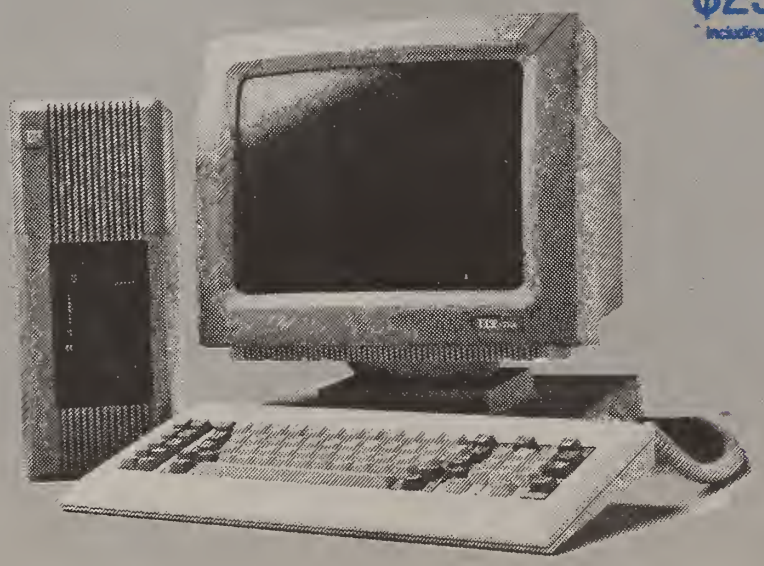

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MICROTIMES

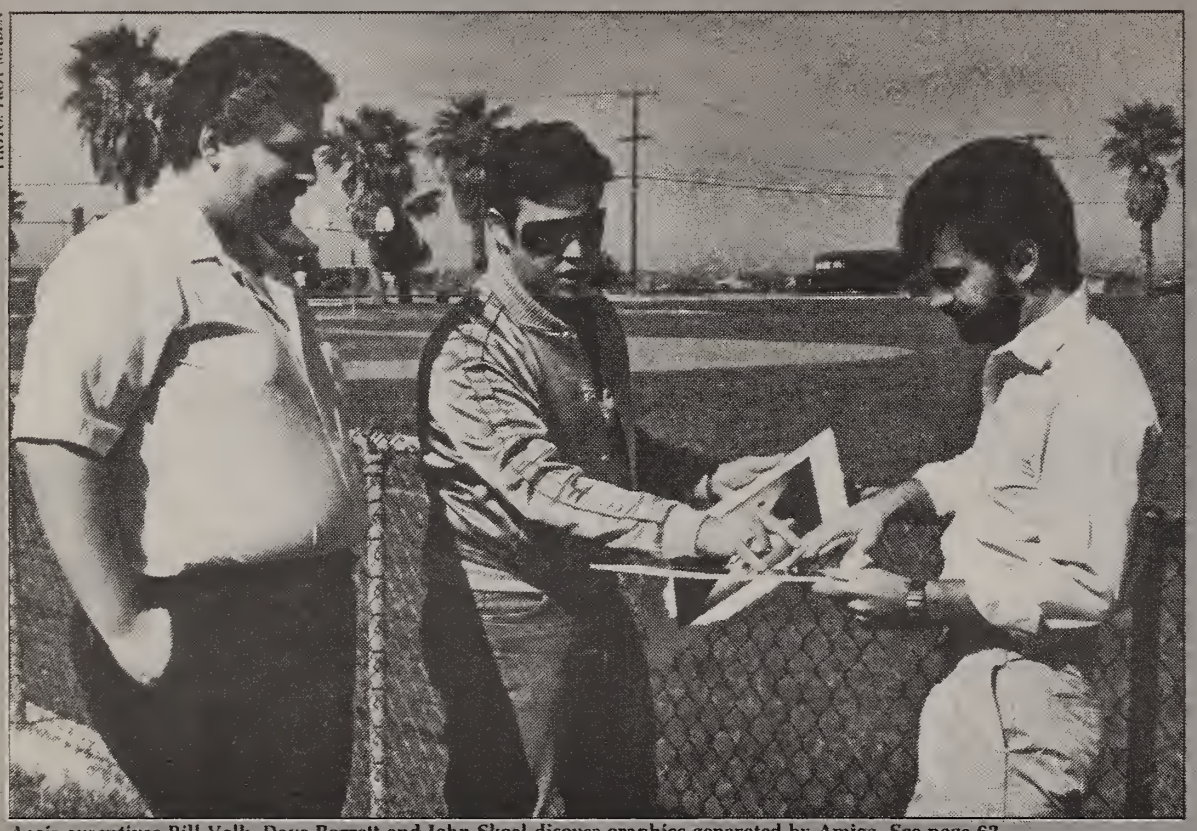
## COVER STORY

# 62
# Aegis Enters The Amiga Age

*By Jody Baram*

This three-year-old company with a commitment to developing genuinely useful software is attracting attention these days with its quality graphics and business packages for the Amiga.

PHOTO: TROY MABEN



Aegis executives Bill Volk, Dave Barrett and John Skeel discuss graphics generated by Amiga. See page 62.

## FEATURES


### 68 Electronic Arts: A Different Approach To Software

*By Matthew Leeds*

Electronic Arts, a company whose approach to software publication looks more like the record business, continues to prosper by producing entertainment-oriented packages even as pundits claim the home computer market is dead. Here, EA executives discuss the company's unique philosophy, why it works, and how the Amiga fits into its plans.

### 76 LIVE! Real Time Video On The Amiga

*By Matthew Leeds*

Oakland-based A Squared Systems created Amiga LIVE!, a low-cost video digitizer with high-quality effects.

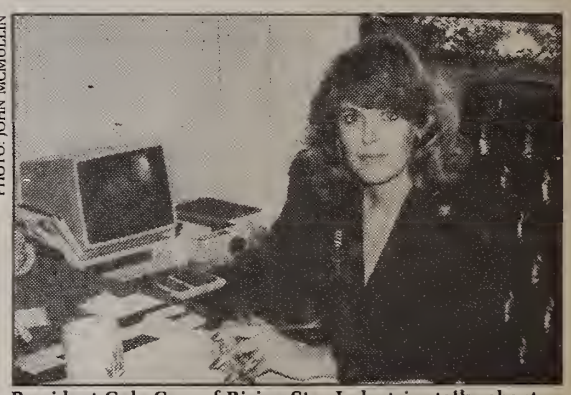
### 82 Hackers Video Goes National

This half-hour documentary on the people behind the computer revolution comes to prime-time TV on PBS stations nationwide the week of April 21. Don't miss it.

### 84 Preview: Amiga Faire

A look at the all-Amiga event taking place in San Jose April 4 – 5.


PHOTO: JOHN MCMULLIN



President Gale Carr of Rising Star Industries talks about her company's new direction since the demise of the Epson QX series. See page 96.


### 96 Rising Star Industries: Life After Epson

*By John McMullin*

Rising Star created the unique VALDOCS software series for the Epson QX computers. When Epson discontinued the QX line, hard times ensued, but today the company is not only continuing to refine VALDOCS but creating new software for the Atari 520ST.


## COLUMNS


### 102 UNIX

*By Bennett Falk*

New this issue, this column will discuss the uses and applications of this increasingly popular operating system in the business world. This month — an introduction to UNIX, its history, ideology and advantages.

### 104 Amiga/Commodore

*By Matthew Leeds*

A survey of software and add-ons currently available for the Amiga.

### 106 Macintosh

*By Barbara Leone*

A look at business simulation packages for the Mac.

### 108 Small Business And Computers

*By L.K. Engelhart*

Why communicating with the user is vital for the systems designer in determining the user's true needs.

### 110 Telecommunications

*By Brock N. Meeks*

Online detente with the Soviet Union, Secret Service goes after computer criminals, and more.

### 112 CP/M

*By Robert D. Athey, Jr.*

Advice to new users: now that you've got that computer, here's how not to be intimidated by it.


## DEPARTMENTS


### 8 But Jan Lewis Says...

This month, a discussion of the so-called "turnpike effect," and how it throws off attempts to forecast future trends.

### 10 Guest Editorial

Berkeley consultant and author Paul Hoffman offers his opinion of "What Apple Can Do Right."

### 14 To The Barricades

An occasional column which serves as a forum on political issues affecting the industry. This month, Michael Odawa, who heads the Legislative Committee of the Software Entrepreneurs' Forum, speaks out on a new interpretation of California tax law that will hurt software authors.

### 18 Business Products

### 44 Late-Breaking News

*By Hartley G. Lesser and Patricia J. Lesser*

Updates to help you keep track of changes in the industry.

### 60 Calendar
### 113 Reviews
### 120 Buyers Guide
### 122 User Group Network
### 138 System Bugs


## HANDS ON


### 78 Run CP/M On Your DOS Machine

*By Robert D. Athey Jr. and Nancy Mulvany*

Run CP/M, a chip-and-software product from Micro Interfaces, not only speeds up your DOS machine but lets it use thousands of CP/M programs.

### 86 Source Print: Help For Programmers

*By Doug Pencille*

This structured formatting utility makes life easier for programmers and developers by enhancing the readability of source code and organizing it conveniently.

### 88 Tempo: Macros On The Mac

*By Bruce A. Fraser*

This package lets you dramatically improve your productivity in using Macintosh applications by allowing the easy creation of macros, in which complex command sequences are reduced to a few keystrokes.

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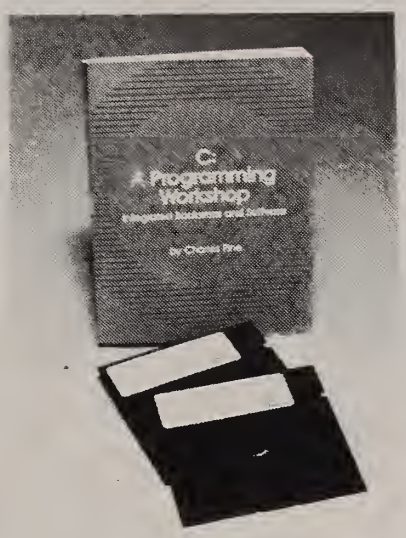


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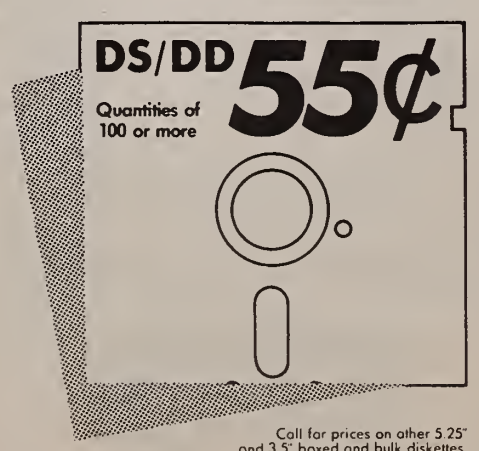


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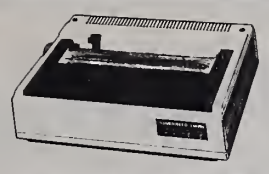

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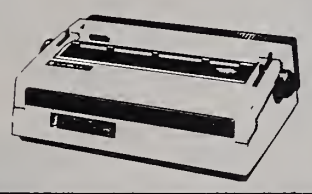

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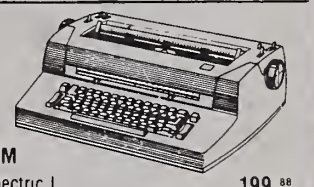

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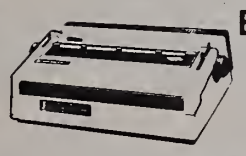

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# Beware The Turnpike Effect!

By Jan Lewis

As long as I've been an analyst, I've been bedevilled by a phenomenon that's the prognosticator's equivalent of the Devil's Triangle. I call this conundrum the "turnpike effect" on forecasting. The turnpike effect underscores reality's ability to throw analysts curve balls, producing responses that invalidate all those supposedly accurate, well-designed statistical methods of forecasting that we learned in business school or during a stint with Procter & Gamble.

The magnitude of this concept first hit me when the New Jersey Turnpike was built. In order to forecast the amount of traffic expected on the new turnpike, an audit of the the amount of traffic currently traveling between proposed exit-locations was conducted. An audit of traffic on parallel roads was also conducted. Yet, when the turnpike was built, the amount of traffic exceeded the forecast by 500 to 1000 percent. The reason? When people are offered an easier, more convenient, or cheaper way of doing the same thing they're doing already, lots of them will do it who weren't doing it before. In other words, it will attract new users.

The market dynamics during the early days of personal computing exhibited manifestations of the turnpike effect. If you had examined the total number of people using computers or word processing equipment, and used this to make a forecast of the total number of users of personal computers, you would have been way off. The PC's new capabilities and convenience spurred growth beyond any "reasonable" expectation.

My most recent close encounter with the quixotic turnpike effect came during a multi-client CD ROM study here at PARG. While preparing the report, I become convinced that all the valuable statistics at hand—numbers of libraries, corporate users of on-line databases, specialized markets using large databases—simply missed the boat. They didn't reflect the potential users who could swarm to CD-ROMs when the medium is mature. When information retrieval is easier and cheaper, it will spur development of new applications beyond anything currently available with on-line databases. This, in turn, will inspire many more people to use large databases. The market, in short, could explode rather than merely grow.

**If you had examined the total number of people using computers or word processing equipment, and used this to make a forecast of the total number of users of personal computers, you would have been way off. The PC's new capabilities and convenience spurred growth beyond any "reasonable" expectation.**

**In the personal computer business, the past several years were spent building a turnpike of new technology that created explosive growth. By this past year the turnpike was finished, and healthy normal growth factors reasserted themsleves in the PC marketplace. But analysts spent all of the year in confusion, proclaiming doom for the business, instead of recognizing the turnpike effect.**

CD-ROMs, I feel, are an excellent example of a Lewis General Rule: When a new technology makes a necessary or alluring task substantially easier, cheaper or more convenient, it creates a totally new market, unfettered by the old's behavior. A technological advance transforms the dynamics of the market.

I use two key elements to aid forecasting of any market that exhibits the turnpike effect. First, it is crucial to understand the fundamental dynamics of the market before the turnpike was built. This means going beyond replacement numbers. You can't just extrapolate historical trends; you can't plug the last 60 months of sales into a Box Jenkins model and expect the model to forecast the next twelve months. There simply aren't any relevant historical data points in a turnpike situation. You need to ferret out the fundamental strategies underlying the market.

Second, it is equally important to understand the new dynamics of the market after the turnpike has been built. Here, caution is best. Don't just look at a market and say: "It's grown ten-fold in three years, therefore I must gear up to accommodate another ten-fold increase during the next three years." In retrospect, the turnpike effect often seems obvious. But, in truth, it usually isn't easy to see until after it catches planners by surprise. In the personal computer business, the past several years were spent building a turnpike of new technology that created explosive growth. By this past year, I believe, the turnpike was finished, and healthy normal growth factors reasserted themselves in the PC marketplace. But analysts spent all of the year in confusion, proclaiming doom for the business, instead of recognizing the turnpike effect.

As for the CD-ROMs, the technological turnpike for that budding marketplace is not yet built; in fact, it has barely just begun. Looking ahead, it is extremely difficult to tell when it will be finished and what the impact might be. It is not easy to spot the changes that result from a new, more effective way of doing things.

But that's the challenge analysts face, and why the job is so stimulating. Personally, I've always enjoyed driving on the turnpike.

---

*Jan Lewis is a well-known industry analyst and president of the Palo Alto Research Group, a consulting firm for the microcomputer industry. This article has been reprinted with permission from* Computer Insider, *PARG's newsletter.*

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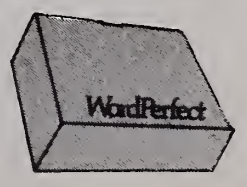


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# What Apple Can Do Right

By Paul Hoffman

Apple is cursed with being the microcomputer company that everyone else knows how to run better. Apple is an easy target: it was started by a couple of guys wearing blue jeans in a garage, it never follows the leader, and it always has products that don't quite fit on the corporate desktop. What could be easier to set straight?

Many pundits miss a few critical points when they conclude, "If I ran Apple, boy, could we make money," First and foremost, Apple had net sales last year of nearly two billion dollars. There are very few people in the world who can imagine what it takes to run a two-billion-dollar company. Apple is larger than any other microcomputer company in the world.

Second, regardless of the blue jeans and the garage, Apple is a huge company. It is run by corporate-type people (the youngest person on the board of directors is 43, and the average age is 54). John Sculley, the chairman of the board, was the chief executive officer at Pepsi, another corporate giant, for five years. Just because Apple's products don't jump into the hearts of big business, don't assume that the company making those products isn't a big business.

Every company has its strengths and weaknesses, and Apple is no different. These corporate features go well beyond the scope of an individual product, though. If you say, "Gee, if they just put slots in the Mac, they'd really sell a bunch," you are ignoring the larger picture of how those slots would affect other current Apple products and products that will be released five years from now. Would a short-term increase in sales of a slotted Mac cut down sales of the next-generation product? Would a slotted Mac restrict the type of product that Apple could release next?

Any change in Apple's current product mix will have consequences for many years. Apple, like many huge companies, is slow to change. Of course, combining slow change with its image of being the maverick company gives it a schizophrenia problem. The marketing department cultivates the "wild, sassy" look, while the president's office tries to convince Fortune 500 companies that it is a serious, long-lasting company. Many companies with similar image problems in other markets have gone under.

The following humble suggestions to Apple are made with the above considerations in mind. They are based on observations of both the Mac and the II family. There is no mention of Apple creating an IBM PC-compatible; anyone who suggests such an inane idea should be ignored.

**Apple's marketing department cultivates the "wild, sassy" look while the president's office tries to convince Fortune 500 companies that it is a serious, long-lasting company. Many companies with similar image problems in other markets have gone under.**

## SETTING THE STANDARD FOR SOFTWARE

Apple always emphasizes that the software that runs on its machines is superior and easier to use than IBM PC software. Certainly, using applications under the Mac interface is incredibly easier for most people than using software on the PC. Apple carefully set up guidelines for Mac software developers to follow. Unfortunately, it then proceeded to ignore many of the guidelines in its own software.

For example, the "watch" cursor is familiar to most Mac users. It comes up in programs when a long operation is being performed (such as loading a program). Apple's programs, however, are notorious for not changing the cursor to a watch when long procedures take place. Try opening a lengthy text-only document in *MacWrite* and notice that the cursor remains an arrow.

The importance of Apple's example should not be underestimated. In the first version of *MacWrite*, you had to press the Command key and the period to stop printing a document. This violated the Mac interface guidelines, and was also very hard to explain how to do in words. Unfortunately, many other major programs that came out after *MacWrite* also used this method for stoping printing. If Apple had only done it right the first time, other software manufacturers would have also.

Another important part of the Mac interface that Apple software does not implement well (causing other manufacturers to follow suit) is scroll bars. *MacPaint* has only a vertical scroll bar, not a horizontal one. Since these two pieces of software are the first thing a new Mac user sees, it would make sense for Apple to spend the time to improve their user interfaces.

Apple is also very insistent on software not having "modes," or parts of a program that a user has to enter or leave in order to perform certain functions or get certain information. However, the current versions of the Finder have just these problems. If you choose to view the files on your disk by their names instead of by their icons, you lose the ability to see how much space there is left on the disk. Seeing the amount of disk space is dependent on the mode you are in; this is a cardinal no-no. (In addition, if you are viewing the disk by name, the horizontal scroll bar does not work.

**Apple carefully set up guidelines for Mac software developers to follow. Unfortunately, it then proceeded to ignore many of these guidelines in its own software.**

Some Apple programs ignore Apple's guidelines altogether. The most infamous of these is the Font/DA Mover, a program that comes undocumented with every Mac. It has no menu bar and does not use the Mac's windows.

The best way for Apple to convince Macintosh software developers to follow the rules, then, is for Apple to do so itself. Mac users have been very picky about ease of use in

*Paul Hoffman is a writer and consultant in Berkeley. He has written five books and has consulted for many large micro companies in the Bay Area.*

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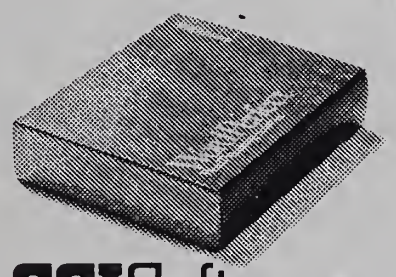

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the programs they buy. Of course, it would make sense for Apple to promulgate similar sets of standards for any future computers it produces, too.

## COMPETING WITH HARDWARE AND SOFTWARE VENDORS

The people who buy Apple computers are somewhat different from those who buy IBM computers. IBM purchasers often want to buy complete IBM solutions: an IBM PC running an IBM operating system and IBM applications with an IBM printer. Many (but not all) Apple customers are a bit wiser. They know that companies smaller than Apple have more leeway to create more innovative and useful products. Software and peripherals from other manufacturers are often less expensive and more versatile than those from Apple or IBM.

Unfortunately, Apple feels the need to compete with companies that produce software and hardware for the II and the Mac. Apple's hardware and software are rarely better or less expensive than the other products on the market, but their presence makes it much harder for small companies to sell what they produce. Why should a computer store carry hard disks for the Apple II that are made by a small company when it already has a dealer arrangement with Apple? It is certainly appropriate for Apple to market operating systems and floppy disk drives to go with the II and the Mac; other software and hardware often do more harm than good.

It is not clear why Apple sells *MacTerminal*, for instance. *MacTerminal* has fewer features than most other Mac communications programs (and, again, doesn't follow Apple's interface guidelines well) and it costs more than many competing products. However, when someone buys a Mac, they may be tempted by buy *MacTerminal* since it has Apple's name on it. The store they buy their Mac from may carry *MacTerminal* exclusively, because the owners don't want to carry products that compete with Apple's. The market for hard disks is similar: Apple's hard disks for the II and the Mac are often more limited, slower, and more expensive than those from other manufacturers. Still, buyers might wonder if it would be better to buy an Apple product.

Apple does not make nearly as much money on its software and peripheral products as it does on its computers. It would make sense, then, to support other hardware and software vendors by not competing with them. This would give the other vendors greater sales and would, in turn, cause them to make better and less expensive products.

This suggestion comes at a time when vendor suspicion of Apple is at an all-time high. Apple recently has been promoting individual products in markets where there are many good packages. For example, Apple recently promoted one of the two desktop publishing magazines; rumor has it that Apple also helped fund it. A similar situation also appeared in Apple's support for a particular word processor for the IIc. This causes great mistrust among suppliers of Apple-related products, who in turn become hesitant to create new products. Of course, poor availability of add-on products ultimately hurts sales of Apple's computers.

**For the cost of 10 or 20 employees, Apple could seed the market with great ideas and good software and hardware designs.**

## COMMITMENT TO MAINFRAME USERS

Apple's commitment to Fortune 500 companies has mostly been in the form of promises of future solutions. They still have no viable product that allows any Apple computer to connect to IBM mainframes in an intelligent fashion (AppleLine is considered a joke by people who have tried to use it). As in the past, John Sculley has recently promised a solution "in the near future."

It is clear that Apple cannot provide the solution. Instead of holding up thousands of sales while it tries to come up with a solution internally, Apple should instead help outside vendors come up with solutions, and even help them promote their products to Apple's corporate customers. There are dozens of companies that have products that connect IBM PCs with IBM mainframes; many of these companies would probably love to have a Macintosh product. However, due to the Mac's closed architecture, most of these manufacturers have given up trying.

If Apple commits some of its technically knowledgeable employees to helping these companies, it is likely that we would see an Apple-to-IBM connection in the next six months. Of course, if they help only one company, they will probably back the wrong one and come out with a product that does not work; it is important to make such technical people available to all qualified companies. Small companies with established communications products are much more likely to be able to produce a working solution than Apple. Of course, this will mean an immediate increase in respectability and sales for the computer. Although Apple will not make any money on selling the communications boxes, they will sell many more computers.

**Apple does not make nearly as much money on its software and peripheral products as it does on its computers. It would make sense, then, to support other hardware and software vendors by not competing with them.**

## GIVING AWAY SERVICES TO DEVELOPERS

If Apple gets out of the business of competing with its developers, what should it do with all those idle programmers? Apple could offer their services to its developers for free. That may sound strange at first, but it would be a very good way for Apple to push forward the level of technology used in software and peripherals.

In the '80s, DEC gave away hardware to the universities so that students would associate "computers" with "DEC." Most of the innovative computer research was done on DEC machines, causing other universities to buy DEC computers, and so on. This is the same concept that Apple used in giving universities discounts.

Apple could get much more innovative software out of its developers if it had software and hardware gurus sit around and come up with great ideas and give them away to anyone who wanted them. For instance, instead of designing a new hard disk, why not have the hard disk experts at Apple go out and give courses to everyone who currently manufactures hard disks for the IBM PC? If Apple's experts have written hard disk control programs, giving them away to potential manufacturers would certainly make them more interested in entering the Apple market.

For the cost of 10 or 20 employees, Apple could seed the market with great ideas and good software and hardware designs. The current customer support system is adequate but very slow, often requiring a week between stating a problem and getting an answer. Having software and hardware gurus who write papers and give free courses would give Apple a great method of telling developers what kind of programs it thinks will sell more Apple computers.

## SUMMARY

In essence, then, Apple can make more by trying to do less. Instead of taking over a part of every add-on market for the II and the Mac, it should spend its time encouraging other developers to do more in these areas. If Apple pledges not to compete with them, developers are likely to spend more time and money creating better and more innovative products. Since Apple has never made much money on software or peripherals (other than the ImageWriter, the system printer for the Mac), this would not be a big loss.

**Poor availability of add-on products ultimately hurts sales of Apple's computers.**

Apple can expect to see increased sales, since the major criticism of its machines is that they do not do as much as the IBM PC. There will be fewer and fewer tasks that the II and the Mac won't be able to do if Apple gives more support to the rest of the manufacturers. Although it will mean giving up a bit of face, certainly the bottom line is more more important than a bit of pride. Without a "we can do everything" ethic, Apple will succeed better in what it does best: making and selling computers. □

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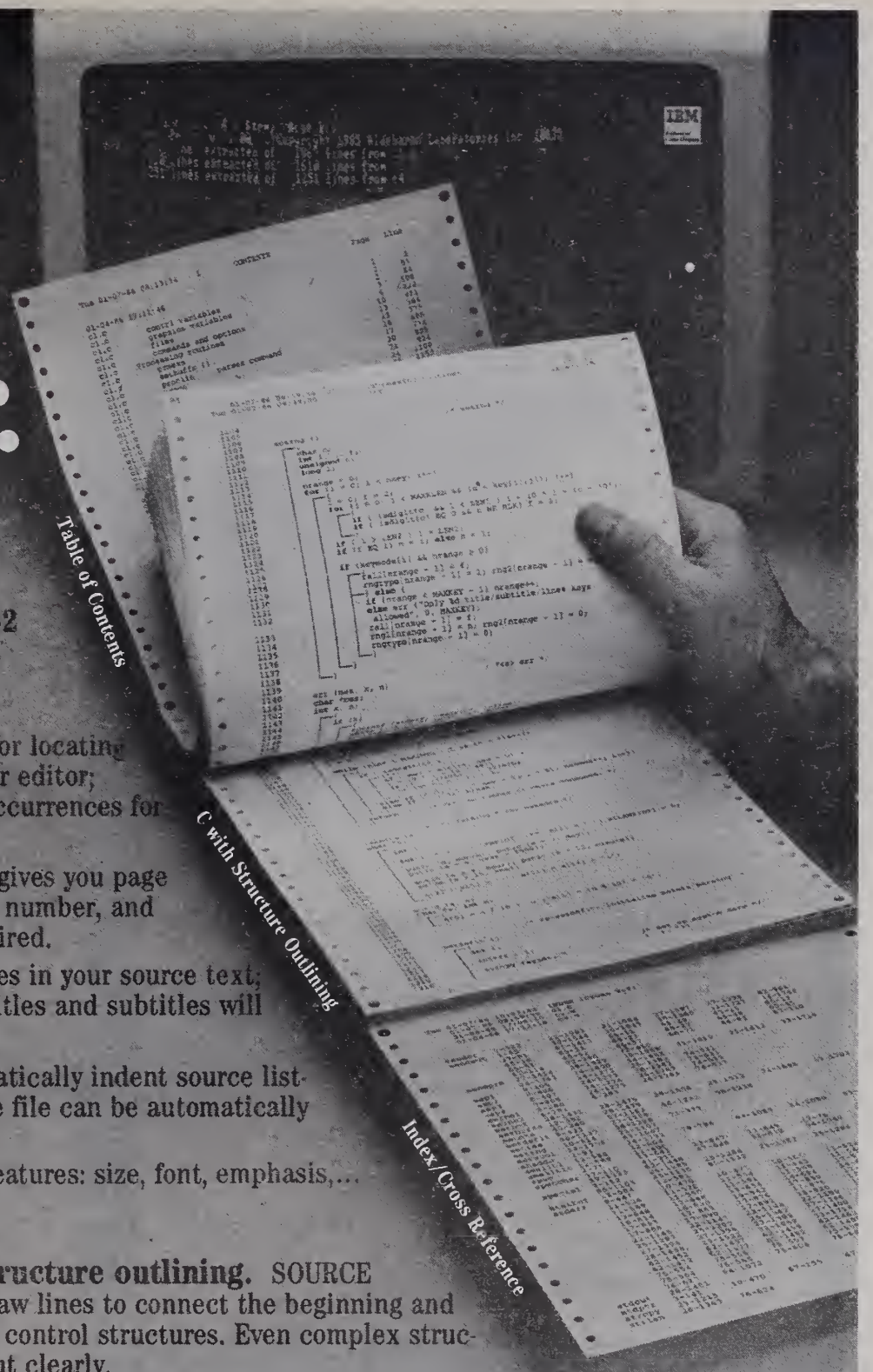


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Pascal

```
46  procedure shellsort;  (* <s> Shell Sort *)
47      label 1;
48      var ind1, ind2, hint, vect:  integer;
49  begin
50      hint := 1;
51      repeat
52          hint := 3 * hint + 1
53      until hint > STEPS;
54      repeat
55          hint := hint div 3;
56          for ind1 := hint + 1 to STEPS do
57          begin
58              vect := aray[ind1];
59              ind2 := ind1;
60              if aray[ind2-hint] > vect then
61              repeat
62                  aray[ind2]:=aray[ind2-hint];
63                  ind2 := ind2 - hint;
64              until ind2<=hint or aray[ind2-hint]<=vect;
65              aray
66          end;
67      until hint
68  end;
```

Routine Extraction

```
C)sp c1.c c2.c c4.c $temp/calg @proclin,control,proclin2,setxcel,dobold
Source Print  v. 1.10 (C)Copyright 1986 Aldebaran Laboratories Inc. 11732
  159 lines extracted of   1863 lines from c1.c
   97 lines extracted of   1610 lines from c2.c
   64 lines extracted of   1251 lines from c4.c
```

BASIC

```
10  REM ***** <s> Sh
20  H = 1
30  H = 3 * H + 1
40  IF H <= N THEN GOTO 30
50  H = INT(H / 3)
60  FOR I = H + 1 TO N
70      V = A[I]  :  J = I
80      WHILE A[J - H] > V
90          A[J] = A[J - H]
100         J = J - H
110         IF J <= H THEN GOTO 130
120     WEND
130     A[J] = V
140 NEXT I
150 IF H <> 1 THEN GOTO 50
```

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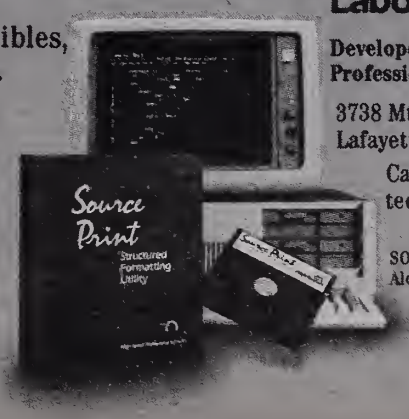


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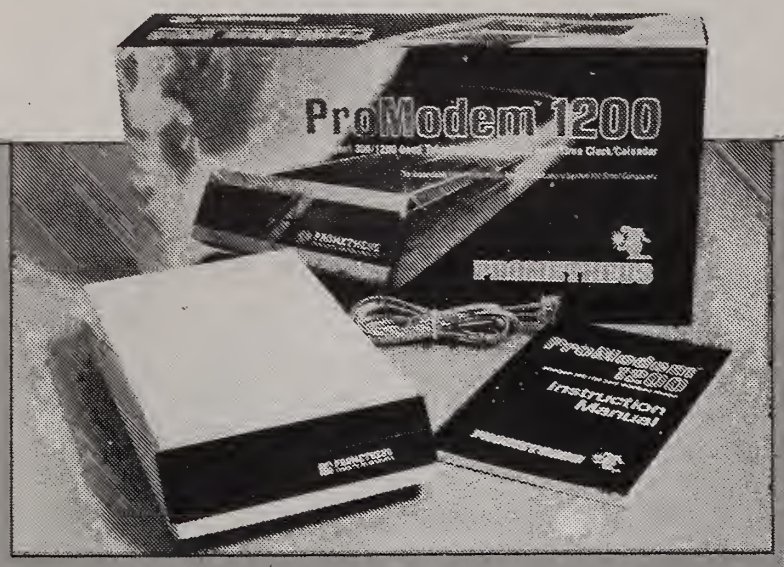


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## TO THE BARRICADES

**Commentary On Political Issues Affecting The Industry**

# Unfair Tax On Software Developers?

**By Michael Odawa**

The software industry has grown and matured in the fertile soil of California business. Those of us who work with computers are grateful for a social and intellectual climate that has encouraged innovation and economic development. We are proud of the advances we have made in just a few short years, and we feel the people of the state, in supporting a great University of California, a beautiful place to work, and an enlightened scheme of government, have contributed substantially to our success.

That is why there are few from our industry who complain about taxes. Software people understand the relationship between taxes and governmental benefits. We know that if we are going to have a good educational system, a clean and safe environment, or professional management in our cities and counties, we're going to have to pay for them. As good citizens of California we consider it our responsibility to shoulder our portion of the costs of these benefits.

It is one thing to pay our taxes with pride, however, and quite another to be asked to take on more than our share of the burden. There is one thing we insist upon as good citizens, and that is that the tax burden be apportioned reasonably and equitably.

Thus, we are dismayed to learn that one state agency is determined to raise taxes from software developers administratively .and unfairly, through a misapplication of the law. The State Board of Equalization is currently preparing to issue a discriminatory administrative ruling that would apply the sales tax unfairly to wholesale software sales, including a software author's royalties from his publisher. Under regulations currently being formulated, a developer's royalties would be assessed an additional sales tax, but only if he or she delivered his program code to the publisher on a floppy disk. If he transferred his copy by telecommunication, the entire transaction would be exempt.

The California sales tax is established in statute and applied across the board to sales of merchandise at the time the items are sold for ultimate consumption. This means, first, that only physical property (tangible assets, in the words of the law) is subject to the tax. Services are not assessed, since they are not physical goods. Licenses are not subject to sales tax because they represent privileges, not tangible objects. Secondly, the tax laws state that each item is subject to tax just once, even though it may actually be sold several times, from manufacturer to distributor, to wholesaler, to retailer, to consumer. The sales tax applies only to the final sale. It does not apply when the transaction is a "sale for resale."

These are simple rules, laws that are fair and usually easy to apply. But since sales tax revenues amount to large sums of money, the specific application of law is often contested. As a result, the State Board of Equalization prepares and publishes a body of regulations making the general rules explicit.

The trouble with this scheme is that the SBE is also the agency charged with collecting the sales tax. Thus the Board has a vested interest in interpreting the law in a way that will lead to more tax receipts, not necessarily social or economic justice.

The SBE is now revising its rule 1502 (which regulates the taxation of computers, software, and related services) and attempting to apply the sales tax to an author's royalties. We have seen a copy of the proposed new ruling, and it is clear that the tax board is misapplying the law.

The sale of a program from an author to a publisher is, first of all, a sale for resale. The software is properly taxed when it is purchased by the end user, but not a second time when it is sold by the author to the publisher. And even more fundamentally, this kind of sale is a transaction regarding intangible copyrights and licenses—rights and privileges—not physical property.

Software should have the same standing in law as a book or manuscript. Computer programs are written by authors and sold by publishers, distributors, and retailers, often in the same stores as books. Floppy disks and similar storage media are the pencil and paper of the computer industry. The circumstance of whether delivery takes place by means of a floppy or a telephone line is irrelevant.

Software is like books. It is written, sold, and used like books. We think it only fair that software should be taxed like books. □

---

*Michael Odawa heads the Legislative Committee of the Software Entrepreneurs' Forum. The Legislative Committee monitors legislation affecting the software industry. For more information on SEF call (415) 854-7219.*

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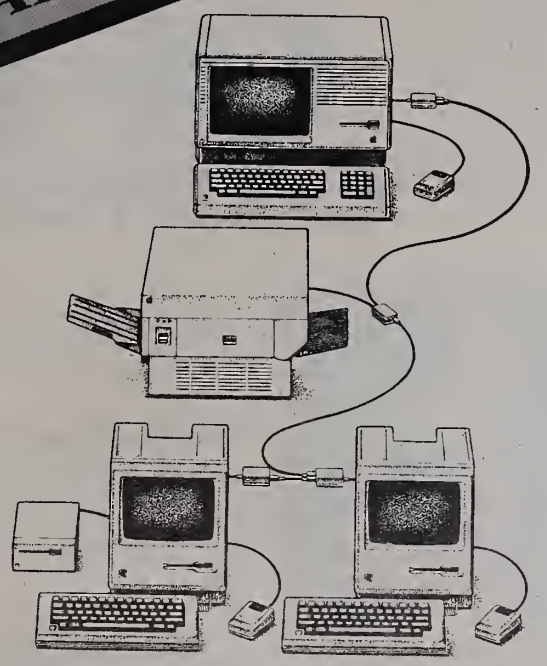

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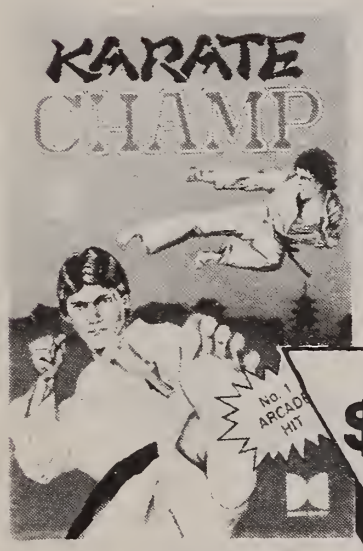


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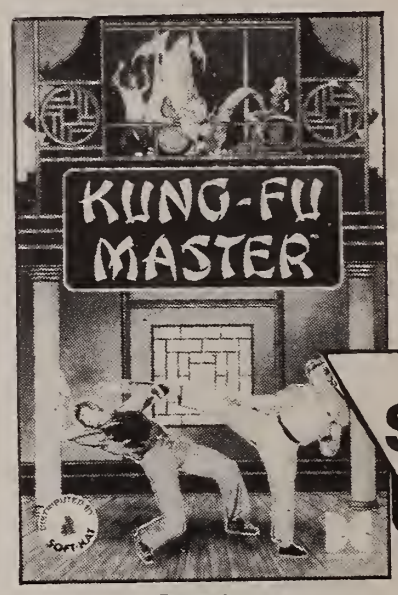


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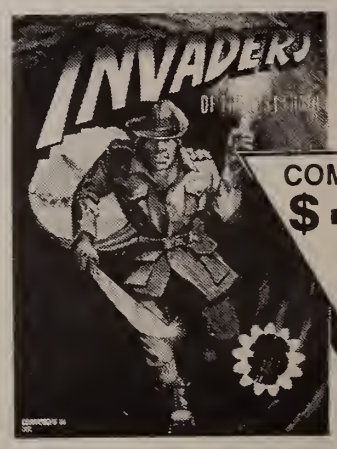


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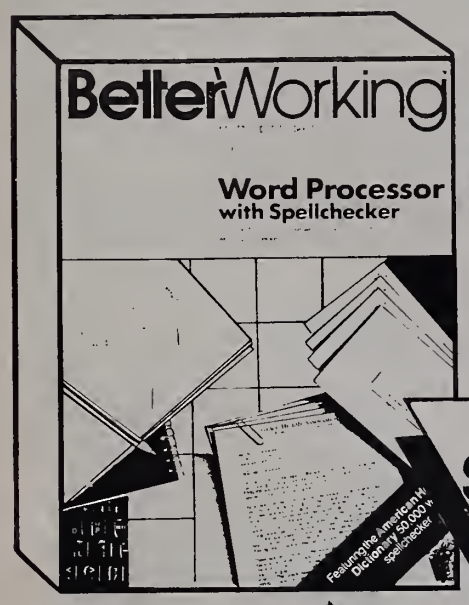


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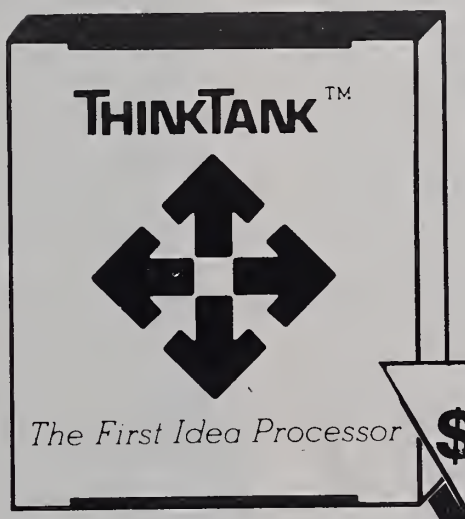


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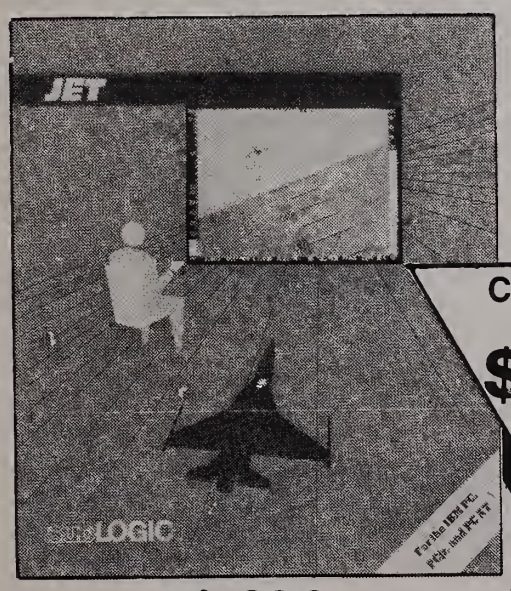


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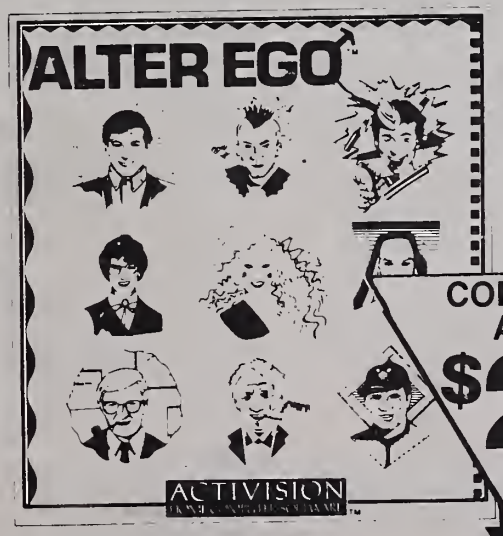


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TELECOMMUNICATIONS

# MicroPhone

**Published by:** *Software Ventures Corp.*
**Written by:** *Dennis Brothers*
**For:** *Macintosh*
**Suggested Retail:** *$74.95*
**Reviewed by:** *Hartley G. Lesser*

We are highly dependent upon communications software, as our very livelihood requires that the crucial communications link be more than just reliable. The program has to be flexible as well, allowing us to upload our weekly magazine to a variety of telecommunication networks without hassle, despite each service's varying communications criteria. Until *MicroPhone* entered our Macintosh environment, we needed several communications software packages. Now *MicroPhone* does almost everything—there's relatively little the program can't do. *MicroPhone*'s built-in features magnify the program's ease of use for novices, while still maintaining a programmable environment for those with advanced communications needs. Kudos to Software Ventures and Dennis Brothers for a truly usable program.

*MicroPhone* possesses all of the communications features most Macintosh users require, plus many extras. Worth noting immediately is the program's script feature, which will endear *MicroPhone* to thousands of users. One simply "records" an action, e.g. logging on to your favorite network, and *MicroPhone* builds a script for that activity that includes not only your input, but that of the network system itsef. This means that when you wish to access that particular service again, all you have to do is activate *MicroPhone*'s script for that network. Dialing, logon, communications parameters ... all are set automatically; all you have to do is enjoy the network after *MicroPhone* has taken care of the access mechanics.

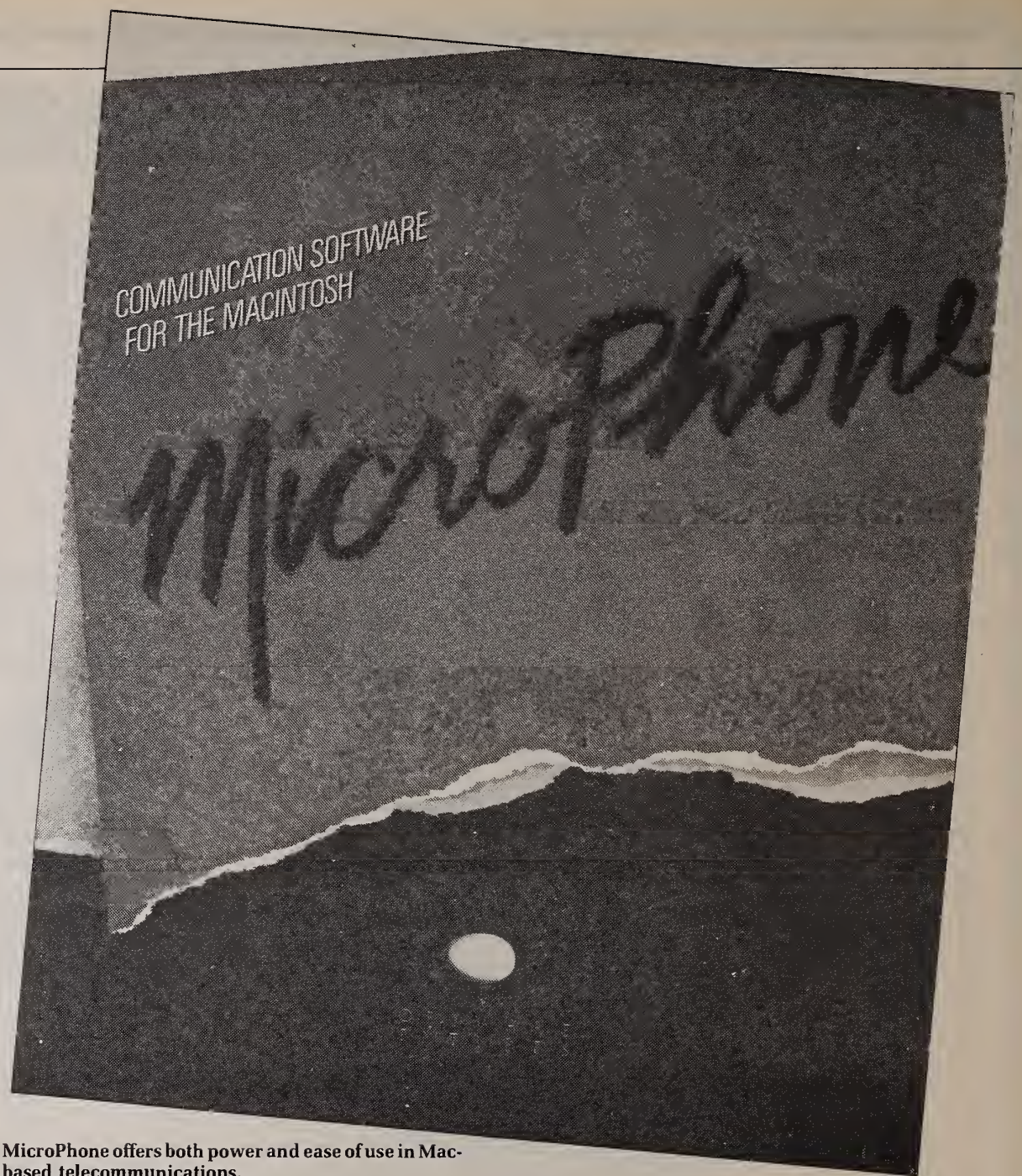
The program has not only a Capture mode, but also a Printer mode, in which all data that scroll onto the Mac screen are printed by the printer. A variety of baud settings, ranging from 50 to 57,600 bps, enable numerous direct communications via null modem. Protocols include XMODEM, YMODEM (batch protocol for multiple file downloads), MacBinary (for Mac-to-Mac communications) and straight ASCII text. Terminal emulations include TTY and VT100, with both ANSI and VT52 emulation in VT100 mode. When transmitting via Christensen XMODEM, the program allows the user to disable XMODEM Cyclic Redundancy Checking. There is also X-On/X-Off Pacing, and the user can even select the shape of the onscreen cursor.

*MicroPhone* comes complete with a desk accessory known as the MicroEditor, your basic text editor with both configure and find capabilities. Also included is Switcher and a CompuServe network subscriber offer.

*MicroPhone* only requires installation if a hard disk is being utilized as your storage medium. The disk is not copy-protected, so it is a simple matter to copy the necessary files to your hard disk.

We could find little fault and much good with *MicroPhone*'s performance. The Script feature is a real time-saver. For example, a typical use would be to logon to a network. In order to automate this action, the following simple steps could be utilized.

First, the settings for the network must be set properly via the Settings Menu—the baud rate, bps, parity and the specific telecommunication connection port. Specify the terminal; settings range from terminal type through more technical features—enabling 1K XMODEM (which allows you to send a block of 1,204 K instead of a block of 128 K) and disabling MacBinary and/or XMODEM CRC.




**MicroPhone offers both power and ease of use in Mac-based telecommunications.**

Once you're satisfied with the settings, access the Phone menu and select Setup New Service. Since your script may include items in addition to just service logon, such as going to a specific module when online, having the capability to simply enter your service could be useful in the future. The program requests the name you wish to give the service, the service's phone number, and the dialing mode (pulse, tone or mixed). Additional entries involve a Do Script selection. This would enable a script in the dialog box to be highlighted and activated once the service itself had been entered.

The Scripts menu is next. Select the Watch Me option. Again, the name you wish to give the script is requested, as well as a Control Key (n) letter of the your choice. This will enable the script to be activated in the future by simply typing the Control (n) from the keyboard. Additionally, you are asked whether you wish the script's name to appear in the Do Script menu, and presented with an on-screen button bearing the Script's name. The button is a handy addition, as it lets a simple mouse click on the button activate the script.

From this point on,all input/output is recorded by *MicroPhone*. You access the Phone menu, where the service you just set up is listed under Dial Service. When you activate the name of the service, *MicroPhone* manages the dialing. Three loud beeps are heard when the network requests input from the user. You enter your ID number or other characters required, and wait once again for the service to either request additional input (such as a separate password) or to move into the network itself. At this point, you could halt the script function by moving to the Scripts menu and selecting End Watch Me. However, if there is an area in your network that you find you tend to access each time you log on, continue your script session. Enter the required code at the onscreen prompt, perhaps for your favorite Round Table or SIG, or the electronic mail module, and press return. Now *MicroPhone* has registered all of the activity in the script. For future network access, you can either access the script by name in the Do Script menu, strike the appropriate Control (n) key, or click on the script button that appears onscreen.

One feature we'd like to see in future versions of this program is an immediate indication, upon ending a scripting session, that the script itself must now be saved. Perhaps a dialog box with two choices could be programmed in, simply stating "Script has not been saved. Yes or No." We found that after activating a newly scripted script and spending 45+ minutes on the networks, you tend to forget that the script itself has not been saved. Granted, before quitting the program, a dialog box does appear asking if you wish the document saved. However, the reference seemed to indicate the text to be saved was the information received from the network and displayed on the screen, which is not always wanted.

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Also, there may be times when immediate access to one of the terminal or communications settings is needed up-front. Instead of having to enter the Settings menu, such necessities as baud rate, parity, stop bits and bits-per-character would be handy if they could simply be changed with a mouse click from an on-screen display. This is not crucial, however, and would only have application to those users who find themselves manually jumping from various networks without accessing Dial Service or a pre-programmed script.

All other features of the program worked admirably—capture on, printer on, MacBinary up-load and download, XMODEM transfer, and setting up numerous scripts. For those who require complex scripts, *MicroPhone*'s scripting language is reminiscent of Pascal, and allows for such conditions as If ..., Else If ..., Else If Line Doesn't Contain ..., Repeat Until, Cycle ..., While ... End While to control the activity of the program. This allows a user to utilize even time of day as a specific requirement before the program actually activates a script, or it can be used within the script to meet a condition before continuing with the script. *MicroPhone*'s versatility ensures the program's ultimate success.

Anyone familiar with a Macintosh will find absolutely no problem in working with *MicroPhone*. Menus and windows control all active environments and are, for the most part, self-explanatory. At no time did we run into any error problems with *MicroPhone*.

The accompanying book is very complete, containing 185 information-packed pages that go beyond simple documentation. "Asides" throughout the manual explain such matters as the Christensen protocol and how to build your own modem cable. There are both a table of contents and an index.

We tested *MicroPhone* on both a 512 K Mac and a Mac XL using MacWorks and found the program operated correctly in both environments.

Software Ventures provides telephone technical support as a matter of course for registered owners. There is no toll-free technical support number; the support line is a local telephone number in Berkeley, CA, which means calls must be placed during normal West Coast business hours.

The technical support is extremely good, however. When we called with a ruse problem regarding running the program from the Hard Disk 20, the technician was busy with another call. The phone was answered after three rings by a polite young man who then took our phone number for a return call. Within five minutes the technician returned the call and provided two suggestions for fixing our alleged problem.

We have not encountered another communications program as simple and powerful as *MicroPhone*. Dennis Brothers and the Software Ventures team have done everything in their power to make this program a joy to use. We highly recommended *MicroPhone*, for novice and experienced users alike. (Software Ventures Corp., 2907 Claremont Ave., Suite 220, Berkeley, CA 94705, [415] 644-2121. Orders only: In CA [800] DENNIS-8; Outside CA [800] DENNIS-7; Canada [800] DENNIS-9.)

## OnLine!

**Published by:** *Micro-Systems Software*
**For:** *Amiga*
**Price:** *$69.95*
**Reviewed by:** *Matthew Leeds*

*OnLine!* is a telecommunications package for the Amiga. It uses pull down menus, windows, auto-

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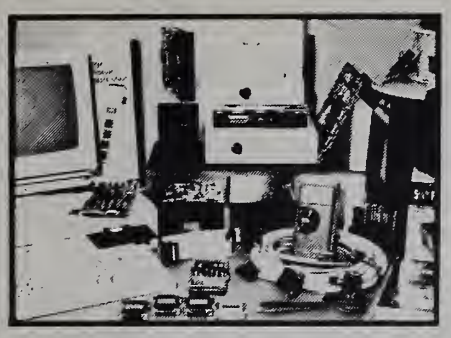

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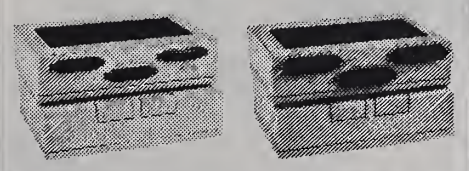

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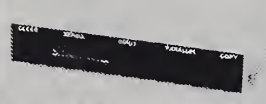

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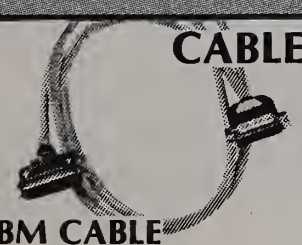

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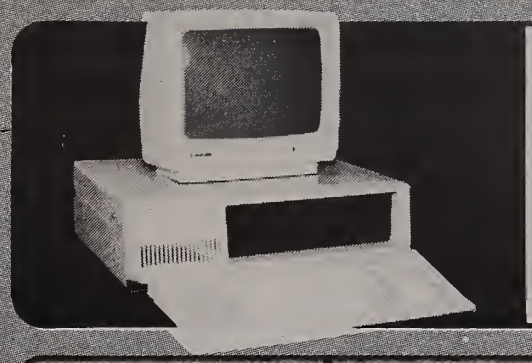

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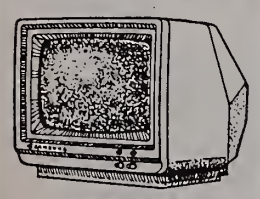

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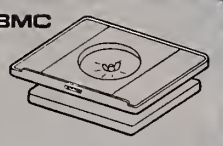

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Telecommunications have become more popular in the last year, as more and more online services and BBSs have become available. With the Amiga as with any new computer, information and software are often in short supply, and telecommunications is the most effective way to disseminate them both. *OnLine!* offers a wealth of features for the power user, and an easy-to-follow manual for the beginner.

*OnLine!* comes on a a non-copy protected disk that includes Workbench so that you can boot directly from the master disk. It runs fully under Workbench and can be run on a 256K machine. It will support any modem and comes pre-configured for Hayes compatible modems. You will need an Amiga modem cable to connect your modem. Do not use a standard RS-232 cable: you will damage either your modem or your Amiga. The Amiga RS-232 part has some non-standard pins that are active, and a cable with all pins active will cause problems.

All of the program setting in *OnLine!* can be saved in an auto-logon file. You can create an unlimited number of these files, which contain the terminal parameters, logon sequence, macros, buffer settings, translation tables, window size, etc. *OnLine!* supports five different protocols: XMODEM, XMODEM/CRC, Hayes Verification Protocol, Compuserve B, and ASCII. All file functions support DOS pathnames and external drives, including hard disks. Incoming text can be reformatted to fit in any size window. Terminal emulation for VT-102, VT-100, VT-52, ANSI, and TTY is included.

*OnLine!* is very simple to use. Just about every function is menu driven if you want it to be. For instance, to set up your macros, just pull down the macro key menu. Up pops a table for you to type your macros into. Want to build an auto logon sequence? Just use the "learn" function to follow you as you go through a normal logon to any service. Some of the names for functions are odd—Archive for data storage, get for load—but in general they all make sense.

More important than the program's ease of use is its power. There is very little that most users will not be able to make *OnLine!* do. Through the use of "script" files, *OnLine!* can be programmed to auto logon, find a particular piece of information, download it, and log off. *OnLine!* files are standard text files, and can be created with ED, the Notepad, or any editor that creates text files. Or they can be created in real time, by using the "learn" mode on *OnLine!* In either case, there is a set of commands that add tremendous flexibility to these files—a mini programming language. Logical operators like IF, WHEN, and NOT, branch commands like JUMP, SKIP, and RWIND, subroutines like LABEL, and hardware controls like PRINTER and CAPTURE are included, as well as others. You can build remarkably flexible sequences that will log you on to a system, check for mail, read it if it exists, look for general system messages on a particular subject, save that information to disk, post a message, and log off. I'm certain you can think of other examples.

*OnLine!* comes with a free subscription to The Official Airline Guide Electronic Edition, and one months free usage. There is a technical support line for *OnLine!*, but it is not toll free, and it is in Florida. *OnLine!* offers a great deal of flexibility for telecommunications, and is worthy of consideration if you are in the market for such a product. (Micro-Systems Software, 4301-18 Oak Circle, Boca Raton, FL 33431, [305] 391-5077.)

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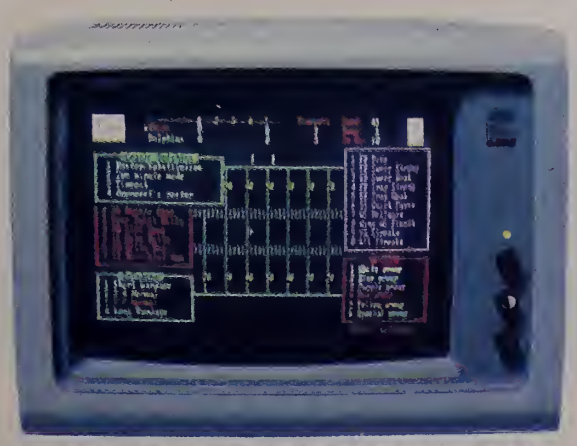

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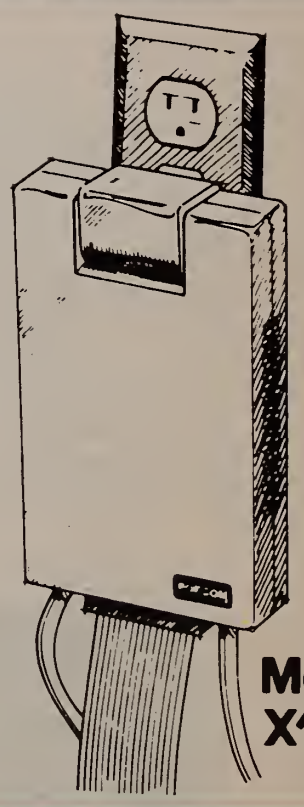

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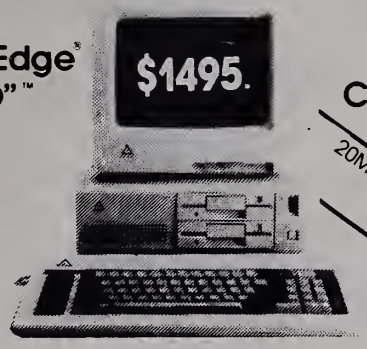


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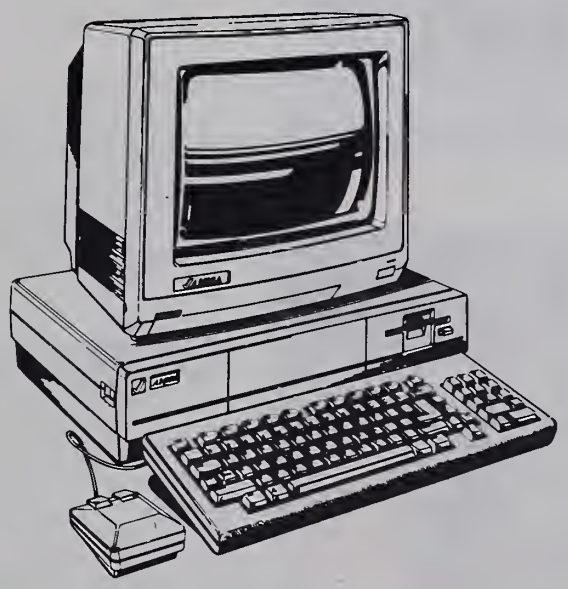

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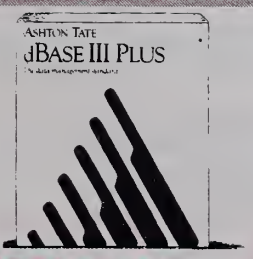


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PX-22 Monitor Specifications

| | |
|---|---|
| Resolution | • 720 (H) x 350 (V) at 21.845 kHz scan<br>• 720 (H) x 240 (V) at 15.75 kHz scan |
| Dot Pitch | • .31mm |
| Display Colors | • 64 at 21.845 kHz<br>• 16 at 15.75 kHz |

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|---|---|
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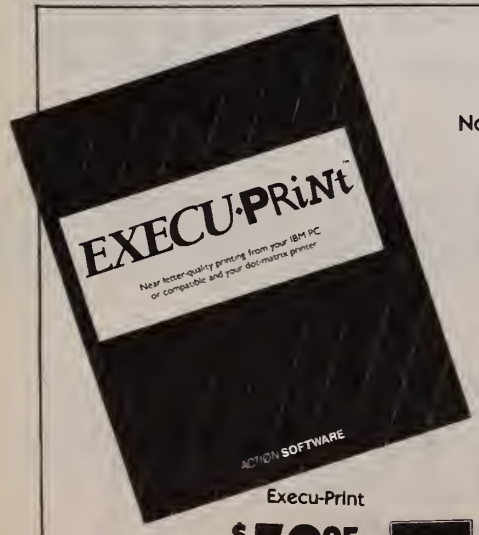


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WORD PROCESSORS

# Turbo Lightning

**Published by:** *Borland International*
**For:** *IBM PC, XT, AT, PCjr and true compatibles. (Minimum requirement: 128K, 2 drives and DOS 2.0+)*
**Suggested Retail:** *$99.00*
**Reviewed by:** *Doug Pencille*

*Turbo Lightning* is a high speed electronic reference dictionary which allows your word processor (or any other text handling program) to check word spelling and find synonyms. I used to like the speed, accuracy and flexibility of *Word Perfect*'s dictionary, but *Turbo Lightning* has proved to offer much more than just the standard.

The package contains three diskettes and a scant 84 pages of reference text. The first diskette contains the *Turbo Lightning* program itself, the help files, a dictionary of transposed letters and the condensed version of the *Random House Dictionary*. The disk is ready for use, in most cases, in a floppy-disk-based system. While this configuration does not use the full 83,000 words contained within the *Random House Dictionary*, it does fit onto a single diskette. The second disk contains the complete dictionary and full thesaurus for use with a hard disk system. The third disk supplies the installation files and supplemental dictionary programs for use with Ram Disk applications. If the user's system has an "above board" RAM expansion card—(RAMpage, AboveBoard or ADVANTAGE) the dictionary will operate at greatly increased speed.

Just like other Borland products, (*SuperKey, SideKick* etc.) *Turbo Lightning* is RAM resident. It is always in the background and only becomes apparent when you misspell a word or call the program up to check a word or request a synonym. Other memory resident programs such as disk managers, keyboard macros and print spoolers can run with *Turbo Lightning* as long as they are set up and called for in proper sequence.

The program works flawlessly and makes even the most novice user feel comfortable. As with any good program, it is menu driven, and HELP screens are provided. It is not necessary to call up the menu each time program functions are performed. The experienced user will find that the use of the "Hot Keys," a set of two keystroke functions which bypass the menu, can control all of the necessary program commands. An "environment" function tells *Turbo Lightning* what program you are working with; each program has its own set of peculiarities, and *Turbo Lightning* responds to each with this procedure. The options include *WordStar, MultiMate, PFS:Write, Microsoft Word, DisplayWrite, Word Perfect, Volkswriter Deluxe*, DOS, *Lotus 1-2-3, SideKick, Turbo Pascal, Reflex* and modem communications. For CompuServe subscribers, 24 additional standards are covered in the Borland SIG as of this writing.

Unlike other spell-checking programs, *Turbo Lightning* tells you a word is misspelled as soon as you type it by means of a slightly annoying "beep." Borland refers to this as the "proofread mode." The user has the option to ignore the warning and continue typing or consult the dictionary at that time. If the latter is selected, the word is displayed in a window, and the possibilities for correct spellings are shown in the lower portion of the window. Simply select the correct spelling by pressing the letter next to that word, and the text is corrected.

For the speed typist who cannot by bothered by the "beeps" or just wants to wait until a page is completed, there are other options. *Turbo Lightning* will check the spelling of the current page of text, highlighting the questionable words; it also allows a check of the previous page. There is an

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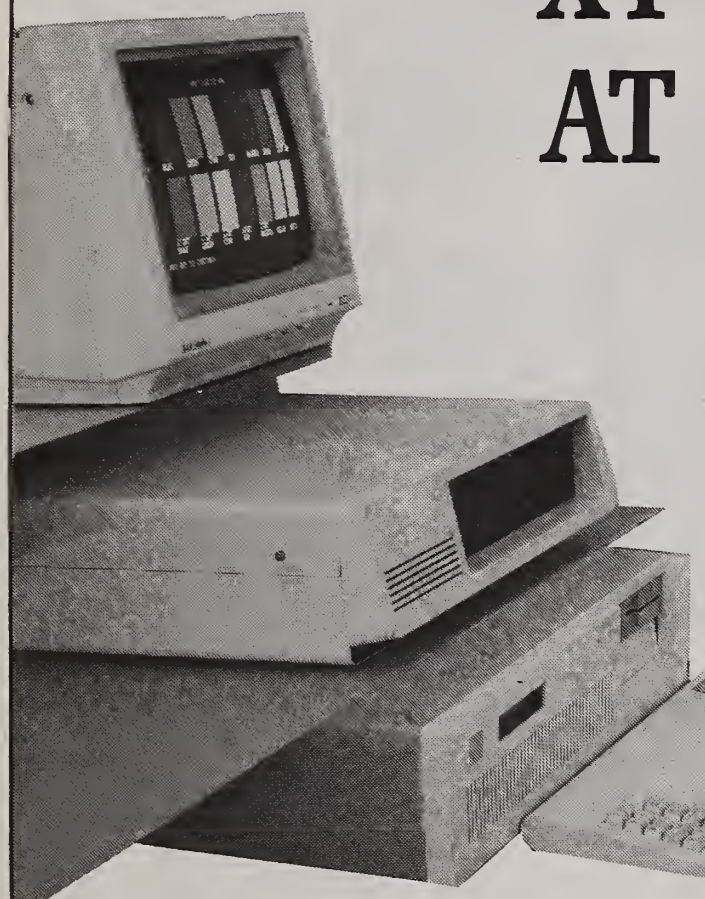

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option that lets the speed typist check the last misspelled word.

Custom installations can be handled for the various PC clones and their alternative versions of DOS. These installations involve determining the type of screen or keyboard input to the program (some graphics boards are too slow for Turbo *Lightning*, and the beep does not match the word being typed) and the ability to toggle the "insert/overwrite" mode.

How does the program work? It uses lists of "key-words" to access reference blocks. These words are compressed into an index, which points to the reference blocks in a complex data base. As the letters are being typed from the keyboard, the data base is being accessed and the series of letters are being assembled and indexed. Since the entire 83,000 words contained within the Random House Dictionary cannot be contained in memory at one time, the compressed portions are being broken down into smaller and more manageable sections, then accessed by the disk drive or the "above board" RAM. The operator is notified by the "beep" when the letters do not match a defined order within the data base files, within a fraction of a second after the word is typed. The speed results from the program taking the first typed letter of each word and isolating that alphabetical portion of the dictionary, then building upon the additional letters being typed.

The thesaurus offers more variation than most I have seen. Where the word does not exist in the synonym dictionary, the user is prompted to opt for a list of "close words." While many of the words offered are not even remotely close, the list does display a few that tend to jog the brain. When you do hit on a word within the dictionary, the thesaurus's speed is incredibly fast; the substitute words are broken down into "verb and noun" categories if applicable. The selection of a replacement word is identical to that used in proofread mode: simply press the letter which corresponds to the word you want or the ESCape key if you don't like any of the alternatives.

*Turbo Lightning* supports color, mono or B&W screen configurations and allows users to select their own color scheme. The "environments" function makes it possible to save to disk a combination of default settings to fit to the use of whatever program you are using. This eliminates the need to change the settings as you go from, say, your word processor to a spreadsheet.

Every perfect program has its faults, but fortunately, I could only come up with a couple, not very serious, ones. More of an annoyance than a fault is that hyphenated words are handled as two separate words. You have no way of knowing if a hyphenated word is spelled correctly unless it is typed without hyphenation. The program only recognizes the letters of the alphabet, not numbers or punctuation. The program also has a tendency to beep at correctly spelled words. Again, this can be controlled by turning off the "auto-proof" mode. Users of other memory resident programs will have to get used to clearing all of them out and restarting them order to remove *Turbo Lightning* from memory.

The documentation is written in a simple-to-understand format, giving examples of use and six appendices which cover operation with other Borland products, installation, setup, batch files, technical reference and a help section. It is one of the better presentations of quality documentation in the software industry. In overview, Borland's *Turbo Lightning* represents one of the finest examples of truly usable software in the marketplace. (Borland International, 4585 Scotts Valley Drive, Scotts Valley, CA 95066 [800] 255-8008 [except California], [800] 742-1133 [California only].)

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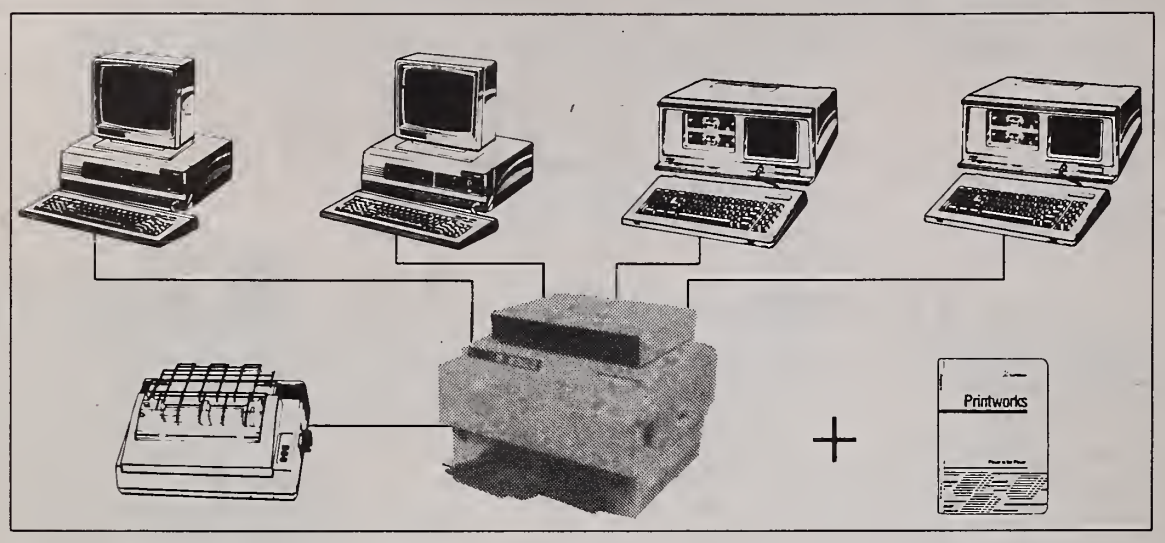


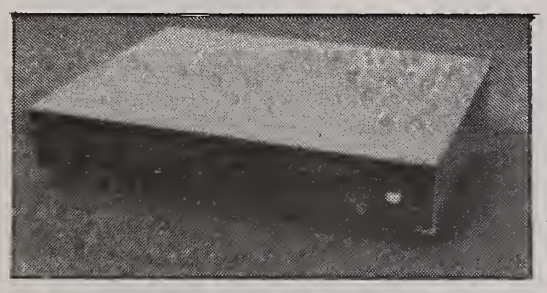

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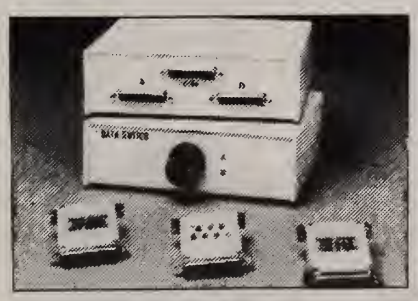

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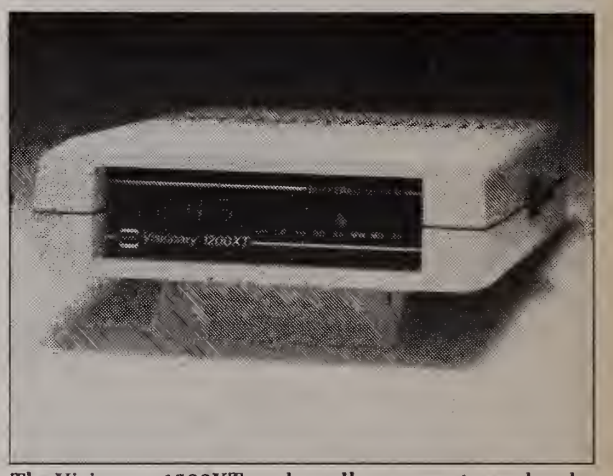
# Visionary 1200XT Modem

**Manufactured by:** *Visionary Electronics*
**Suggested Retail:** *$495*
**Reviewed by:** *Robert D. Athey Jr.*
**© 1986**

These days everybody and his brother is out there making modems. Extravagant claims are often made, and I tend to be pretty skeptical. However, the Visionary 1200XT is indeed what it claims to be.

The Visionary 1200XT looks small and unassuming: a grey-impact resistant plastic case, with a clear plastic front displaying an LED clock as well as the "standard" signal light system of eight LED dots with the letters for each underneath.

As a "buffered" modem, the Visionary 1200XT has the memory and capability to act as a computer-independent message send/receive unit,




**The Visionary 1200XT modem allows users to send and receive messages over the phone lines independently of their computers.**

even to the point of printing out the messages you instruct it to, on a separate printer of your choice. While you can also use it as you would any other modem, the 1200XT's special features allow you to program it to act independently—in the middle of the night, for instance, which could be advantageous in some situations. In a recent phone conversation Brad McMillan, President of Visionary, said that security-based special programs are being programmed into their newest modem control chips. One such security idea is the "call and ring back" mode for sensitive data transmission. The modem was originally created for telex communications, and is now being used to address the needs of home and business users.

The most striking feature of this device is that it can operate independently (say, at 2 am) to call and pick your modem-mail up from the RBBS or computer information services you use. The memory buffer in it can store the phone numbers—and any ancillary coding (e.g. for Sprint, MCI, etc.), pauses, and whatever is needed to get to the RBBS; send in any log-on messages, and coding to get to the mail/messages you want; pick up the messages and store them in memory, or drop them off from existing memory files; it will then log off in an appropriate manner.

The buffer memory is over 18K, but message sizes (for sending) are limited to about one CRT screenful; in practice, though, that's plenty for the standard e-mail, unless you're unusually long-winded. Using the buffer allows you to take advantage of the lower phone rates in the late night-early morning hours, and also improves your chances of getting through to some of the popular boards.

You can use the modem with your computer's modem software, or you can access it directly. One of the first commands is "set" to set the clock

time/date. Then you can type in "stat" to get a status report on the internal electronic switch settings (parity, baud rate and the like). If you type in "memory," you'll find out how much memory is left for storage. The documentation instructions are clear on how to enter phone numbers, messages and calling instruction programs, with examples given for several types of e-mail. There is also a command set to allow you to enter the modem during a call and get back to the RBB (if you need to). Programming can be set up to print out the E-mail received, if you leave the printer on and hooked up. The computer need not be turned on, a valuable security feature which keeps callers from getting into your computer's files.

In my tests of the new chip in the Visionary 1200XT, I found no problem uploading/downloading files from local boards, though there were occasional files that wouldn't transfer (I suspect something's wrong with those files). Calls around the local RBBs showed few problems, though some exchanges gave a lot of electronic trash. Most exchanges did not show this problem, so I suspect something in the telephone company switching equipment. The degree of the problem would vary from call to call, within a day, or from day to day.

I tried the modem both at 300 baud and at 1200 baud. I had no serious compatibility problem with the MDM7 software I use in my computer, and no problems occurred with the KMD or XModem software in the RBB computers, either.

All in all, the Visionary 1200XT promises to be just a little different, and it delivers. (Visionary Electronics Inc., 141 Parker Ave., San Francisco, CA 94118 [415] 751-8811.)

## MacCharlie

### New Version

**Manufactured by:** *Dayna Communications*
**Price:** *$1295 (two 360K disk drives, 640K RAM, DOS 3.1, GW BASIC, Mac software)*
**Reviewed by:** *Mark Veljkov*

Dayna Communications of Salt Lake City should be commended for its efforts with MacCharlie. Over a year ago, Dayna announced one of the most ambitious peripherals yet for the Mac—a device that would allow the Mac to run IBM programs! The industry was skeptical, to say the least, and when MacCharlie was first released there were problems. The unit was only 75 to 85% compatible with IBM software. IBM programs could only run in the monochrome mode, and MacCharlie's screen refresh was even slower than the Mac's disk drives. Now Dayna has made significant improvements.

One of MacCharlie's primary problems was its poor compatibility with IBM software. *Lotus* ran okay, Microsoft's *Word* was iffy. *Rbase 5000* wouldn't run—the lists went on.

With the new version, though, Dayna has rewritten MacCharlie's ROMs, and I have not been able to locate *any* mainstream software program that won't run. Every program I have attempted to run has worked fine.

Dayna has also released an expansion box. This means that you can now add a color/high res graphics board, network cards, and just about anything else that you would normally put into an IBM. Compatibility is now high, no matter what you want to run.

Since Dayna rewrote its ROMs, MacCharlie's screen refresh is as fast as any standard IBM. It even rivals the screen refresh time associated with telecommunications. Because of the new ROMs and quicker screen refresh, *Lotus* users will find no time lag when moving to other sections in a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• *Expandability....* The MonsterMac has an expansion connector that allows additional hardware to be plugged in, such as the new Levco SCSI hard drive controller card, to provide extra capabilities such as more memory, a fast hard drive (internal or external), or anything else that third-party designers can develop. A fast internal hard drive designed by Levco, the 20 Meg OverDrive, will be available mid February 1986. CJS' new protected ramdisk, RAMSAFE™, allows recovery from a bomb or system reset, and will be available in March.

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large spreadsheet. The graphics associated with *Framework II* and other graphics-rich programs are also much faster. As with an IBM, though, you will still need add-on cards to accomplish anything fancy.

One of MacCharlie's best features didn't even come from Dayna. When you run your Mac, MacCharlie and Switcher, you have the best of both worlds. With MacCharlie's software running under Switcher, you have the essence of a true co-processing system. Now you can do your work in the IBM mode and then "switch" over to the Mac. In a network environment, this means that both your IBM and Mac can be connected to the network. Networkability is another of MacCharlie's special features—two computers in one, all on a network.

Dayna has substantially reduced MacCharlie's price. The original price was $1,795—you got two 360K disk drives, 640K of RAM, DOS 3.1, GW BASIC, and the necessary Mac software. The new price of these goodies is $1,295. Is it less than you would pay for a free-standing IBM? That could be debatable. But for what MacCharlie could do for you it may be a small price to pay.

The people at Dayna should be commended for their efforts with MacCharlie. They have followed the industry's example of price reduction, and they listened to their end-users. If you have a need for dual processing, but you hate to give up your Mac, then MacCharlie may be just the ticket.

# HabaDisk 800

## 800 External Drive For The Mac

**Manufactured by:** *Haba Systems*
**Suggested Retail:** $399
**Reviewed by:** *Bruce A. Fraser*

At last, a double-sided disk drive is available for the Mac. By the time you read this, there will probably be several manufacturers offering 800K drives, including Apple, but Habadex got theirs out first.

In appearance, the HabaDisk 800 is identical to its predecessor, the HabaDisk 400, and HabaDisk 400 owners can upgrade their drives at a reduced price. The drive comes complete with cable and is ready to plug in and start straight from the box. The documentation has a couple of trivial errors in it (e.g. the manual tells you to use a small screwdriver to tighten the plug, which has Apple-type thumbscrews, and the explanation of the manual-eject feature is garbled) but the majority of users will probably never read it anyway, so this is not a major problem.

In the Finder, the only visible clue that you are using a double-sided disk is the heartwarming sight of the message "2K in disk, 800K available" in the title bar of the disk window. If you have a 400K disk loaded in the external drive, the Finder looks exactly as it does using a 400K external drive. The drive can read from and write to any existing 400K Mac disk, but any disks initialized on it will be 800K disks which cannot be read by th Mac 400K drives. This means that if you wish to create a 400K Mac disk you should use the external drive to read the original and make the copy in the internal drive. MacPlus owners and Mac owners who have taken advantage of Apple's ROM and disk drive upgrade might wish to consider whether or not they need to be able to create 400K disks before getting rid of their 400K external drive. (As far as I know, none of the 800K drives can format a disk as a 400K disk, although they can all read and write to them.)

At this point, a note about single-sided (SS) vs. double-sided (DS) disks is in order. The simple fact is that SS and DS disks are physically identi-

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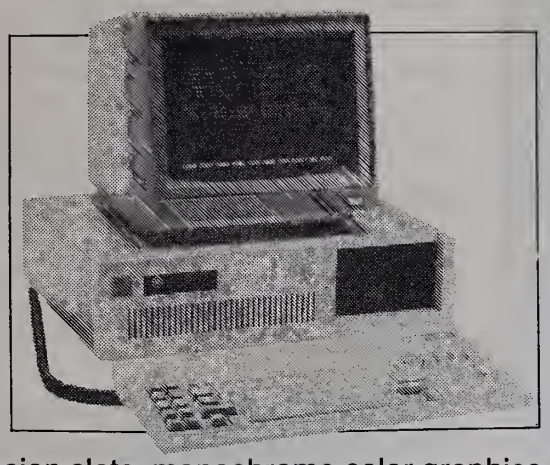

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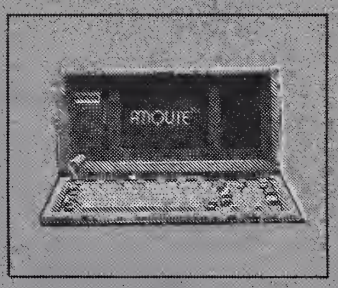


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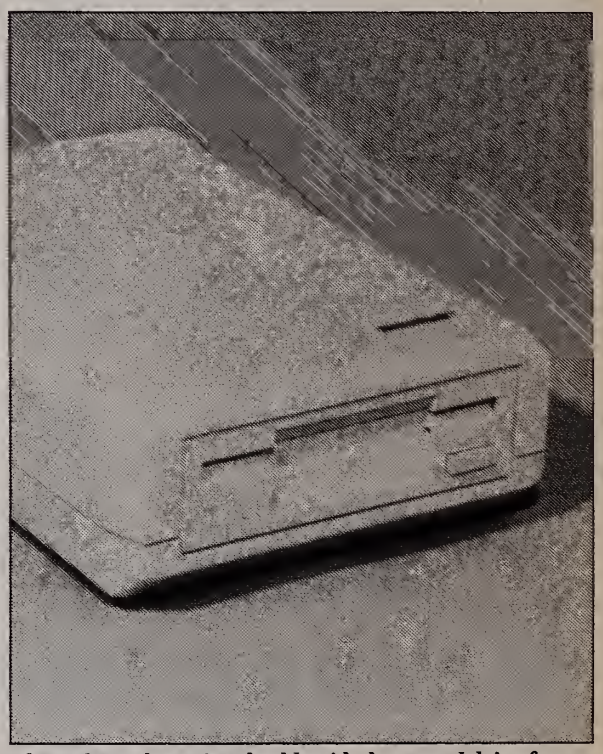
cal. So why do DS disks cost so much more? When the manufacturers sell a disk as SS, only one side of the disk has been verified as error-free. DS disks have been verified on both sides, which takes more time and has a higher reject rate, hence a higher cost. However, most SS disks can be used as DS, simply by initializing them in an 800K drive. They might not be as reliable as DS disks, but they cost half as much. As long as you back up your work frequently you can use SS disks in your 800K drive and get 800K on them. I have successfully initialized 20 or so SS disks on the HabaDisk 800 as DS disks. So far I haven't had any problems with any of them; although a couple of them failed to initialize properly the first time, a second attempt worked perfectly.

The drive itself has performed flawlessly. It is noticeably faster than the internal drive on my Mac with 400K disks, and 30%–40% faster with



**The HabaDisk 800 is a double-sided external drive for the Macintosh Plus computer.**

800K disks. The speed improvement with the 800K disks comes because the 800K drives use two read-write heads, one for each side, and alternate tracks are written to opposite sides of the disk, so there is no delay in waiting for the head to move to the next track.

The HabaDisk does make some alarming noises for those of us who are used to the discreet purr of Apple's Sony drives, but after checking several samples and talking with a friend who has had a HabaDisk 800K for about three months I concluded that the noises are normal, and after a week or so I got used to them. The only functional difference I can find between the Apple drives and the Haba is that the Haba has a manual eject button. However, unlike some of the cheap external 400K drives, software-controlled ejection is fully supported. (Ctrl-Shift-2, Shut Down, selecting the disk icon and hitting Ctrl-E, and dragging the disk icon into the trash all eject the disk.) I haven't had to use the manual eject feature yet, but the next time the system locks up, at least I won't have to use the straightened paperclip to get the disk out of the external drive.

The Haba unit is competitively priced ($250-$275 from most suppliers) and is available now. If you use *Jazz*, *Excel*, *Pagemaker*, or *Helix*, you probably have been wanting a double-sided drive for some time. I can recommend this one without reservation. [HabaDisk 800™, Haba Systems, 6711 Valjean St., Van Nuys, CA 91406-5819, [818] 989-5822, [800] 367-4222.)

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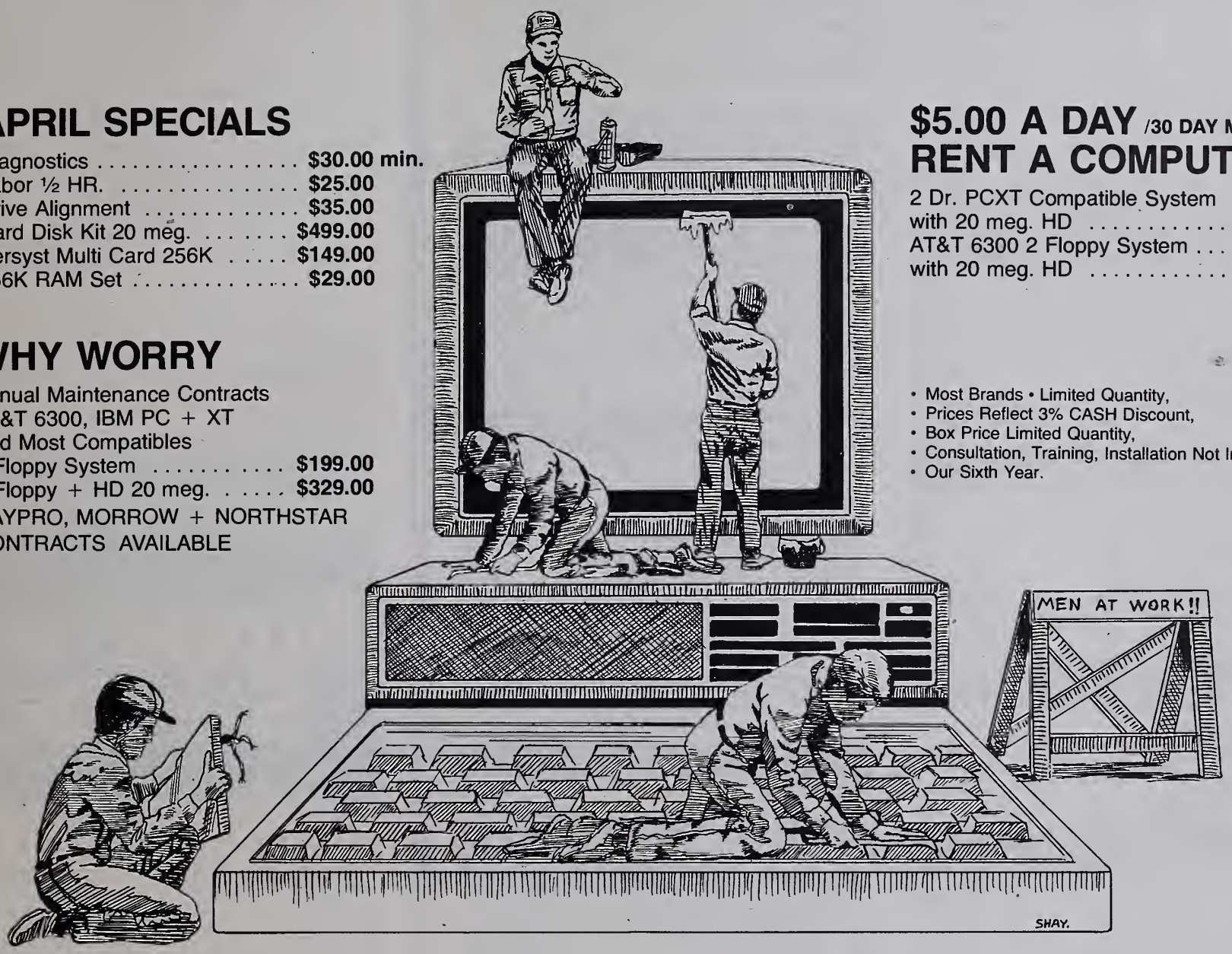


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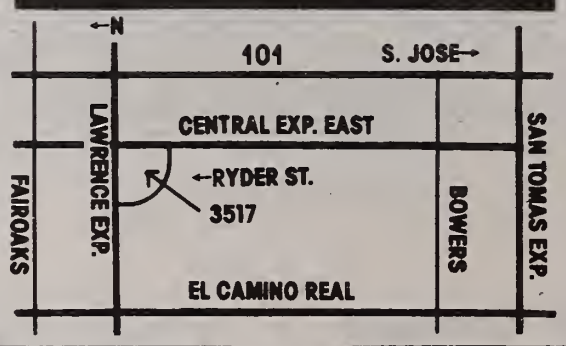




DATA BASE MANAGERS

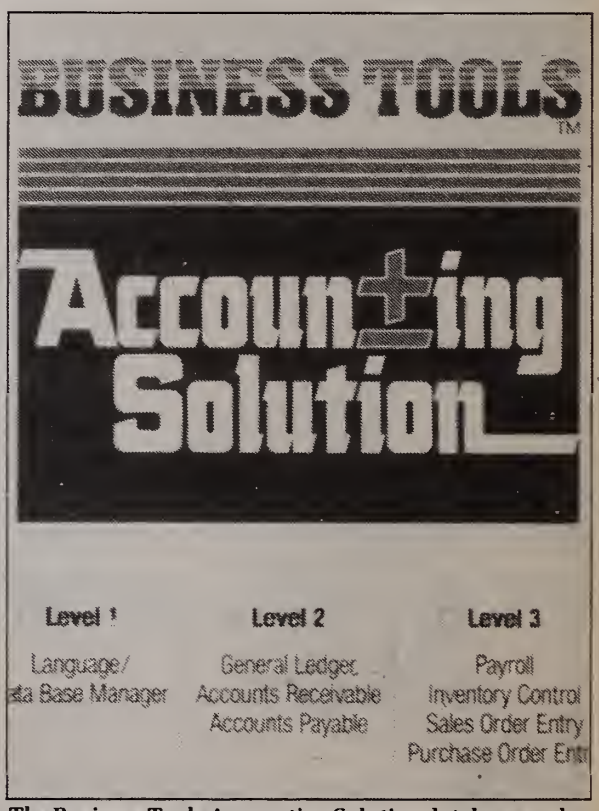
# The Accounting Solution

## Level 1 Language/Database Manager

**Published by:** *Business Tools Inc.*
**For:** *IBM PC and compatibles*
**Suggested Retail:** *$99*
**Reviewed by:** *Doug Pencille*

The new wave of quality software for the IBM and compatible family has been arriving at the retail stores in quantity. The news isn't a matter of astounding developments in programming code, nor is it in the form of the latest invention of the wheel. What's new is the affordability. Good business and financial management programs are hitting the market at under $100. Even more revolutionary, programming languages are in the same price range. To top that, Business Tools Inc. is offering a relational data base manager, procedural language, and compiler together in its *TAS Level 1* package for only $99.

It is best to mention up front that the true power of TAS is not restricted to its ready-to-run data base manager. Rather, it is the complete lan-




**The Business Tools Accounting Solution database package offers power comparable to that of dBase and RBASE5000 at a fraction of the cost.**

guage and compiler that makes TAS stand out from the pack. While it is advisable to have some knowledge of programming (any language), it certainly isn't a necessity. The advantage would be in handling a structured format and the logic behind it when customizing your data base and the reports you will generate from it.

The learning process is really quite simple, and the first section of the manual is devoted to a tutorial. The step-by-step process is easy to follow and presented in a straightforward manner.

The new user will find that, after installation, the progression from start-up to the set-up of the first data base is no more than an hour's time. By the time you reach the end of the tutorial, you will have enough experience under your belt to create your own data base application. From there, the process of digesting the heavy-duty documentation in the reference section begins. While the experienced programmer will jump right in, the timid may find that they are reading the same line over and over again while the information sinks in.

If this sounds like too much work, sit back and think of the fact that you have virtually the same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## DATA BASE MANAGERS

data base and programming power at your finger tips with *TAS* as the guy who spent $600 more for *dBASE III* or *RBASE 5000*. If that isn't enough, with *TAS* you have just about as many fewer pages of documentation as the other guy spent more money. In other words, for *TAS*'s low price you have a very powerful system, and the raw documentation is quite condensed.

The next logical question is how *TAS* stands up to the big guys. While all three (*TAS*, *dBASE III* and *RBASE 5000*) are unlimited in the number of records per file and file size, *TAS* allows more than double the individual record size and walks away with its unlimited number of fields per file. *TAS* is menu driven, an applications can hold up to 17 million records. For businesses seeking the advantage of multi-user capabilities, *dBASE III* can't help you, and *RBASE 5000* will tack an additional $1400 on to your bill. *TAS* can accommodate your need for a mere $100.

My test run of *TAS* provided me with neat, clear and ultra-fast sorts and data retrieval. The speed is due to the fact that the language is compiled, not fragmented code. The one weak area of the program, however, is the error handling. Internal errors are caught and dealt with using the proper bells, beeps and user messages. The fall-down comes with user- or system-provoked errors. While setting up fields within the data base, I intentionally left a write protect tab on the data disk. This produced a fatal error. The DOS error message "Abort Retry Ignore" was written to the screen and prevented any further input. There was no way out of the situation except to abandon what work was done and re-boot the system. I may have hit the funny bone of the program, but this in no way discourages me from giving the package high marks in all other areas.

Business Tools Inc. offers two additional versions of *TAS*. One is the same data base/language plus a general ledger, accounts receivable and accounts payable modules for $349. The second includes all of the above plus an inventory, sales order entry, purchase order entry and payroll at $499. Although these were not reviewed, the product worthiness of the data base/language and the price make either package an attractive candidate for the business software library. (Business Tools Inc., The Accounting Solution (TAS) (The Business Distributors, 151 Haskins Way #C, South San Francisco, CA 94080, [800] 222-2252.)

## WORD PROCESSORS

### RightWriter 1.1

**Published by:** *Decisionware, Inc.*
**For:** *IBM PC, XT, AT & most clones*
**List Price:** *$69.95*
**Reviewed by:** *Ken Fermoyle*

This program is aptly named. It helps you write better by attacking basic writing problems: overlong sentences and paragraphs, overuse of jargon, cliches and the passive voice, ambiguities and redundant phrases.

It points out misuse of commas and semicolons, incomplete sentences, double negatives, weak phrasing and other flaws. It even suggests alternatives to weak or poorly written phrases.

*RightWriter* has limitations, however. It's a tool that goes strictly by the book, applying rules that deal with the syntax, or structure, of writing. It doesn't understand the meaning of words or the principle of literary license.

Although it has value for writing professionals, the people who stand to gain most from *RightWriter* are those who do some writing as part of their job: sales and business people, engineers, lawyers, accountants. It can improve their com-


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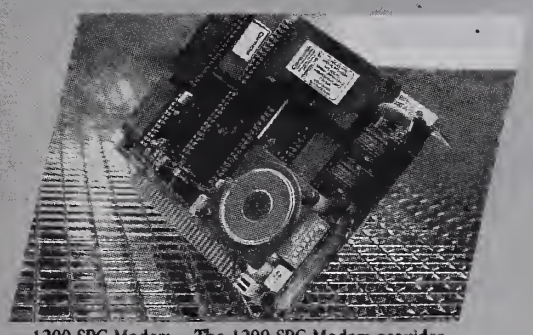
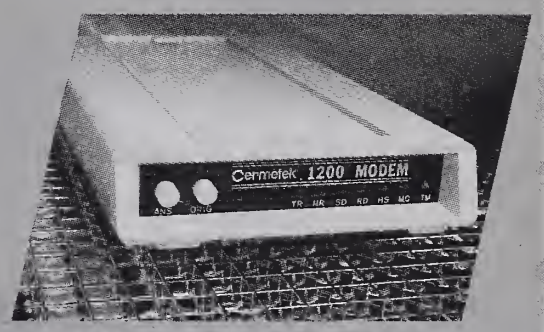
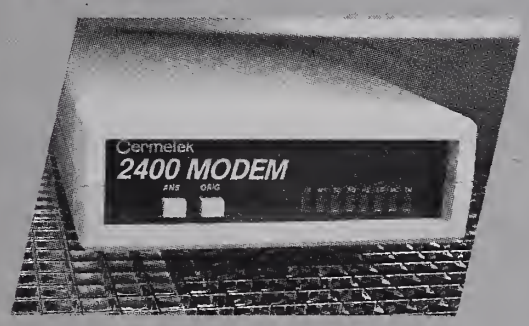


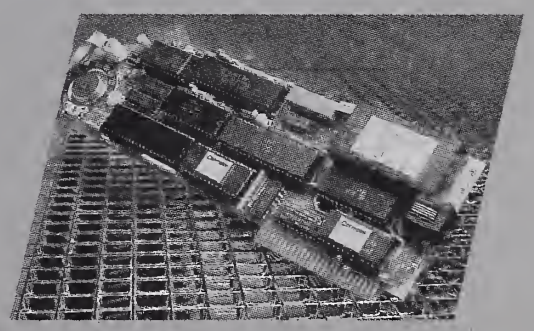
1200 SPC Modem – The 1200 SPC Modem provides Hayes™ compatibility - designed for the short slot in the IBM™ PC/XT/AT or clone.




1200 Modem – A Hayes™ compatible unit featuring call progress tone detection, voice-data switching, built-in diagnostics, and more.




2400 Modem – A Hayes™ compatible 2400 bps modem with intelligent features and built-in diagnostics. MNP error control is available on the 2400 EP Modem.



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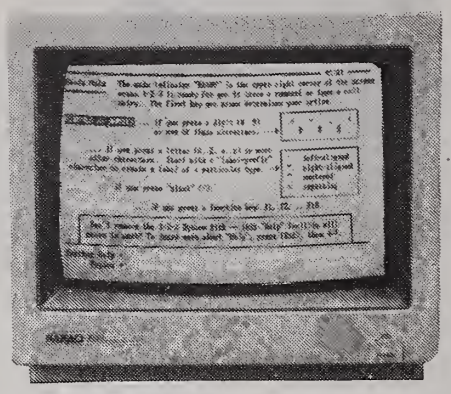

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## WORD PROCESSORS

munication skills, help them turn out better letters, reports, memos and presentations.

The program takes almost no time to learn. It has just one command: the word RIGHT. What might slow you up a bit in using *RightWriter*, depending on what word processor you use, is preparing your text files for the program to do its thing. If your w.p. software produces standard ASCII files, no problem. With *RightWriter* in drive A and your document on a data disk in drive B, for example, you simply type the following at the A> prompt: **RIGHT B:filename.ext <return>**. *RightWriter* then analyzes your document and produces an output file with comments and summaries inserted. It never disturbs or changes the original file.

With most word processors you can make revisions directly on a marked-up file, in response to *RightWriter* comments and summary remarks. Then you use the program's removal mode to produce a clean final file copy of the text.

The procedure is simple and is well explained in a manual of some 50 informative pages. With few exceptions, in fact, the author clearly practiced what the program preaches; the manual is clearly written. It includes a short tutorial chapter that takes you through *EasyWriter* step-by-step.

How long the program takes to analyze a text file depends on both length of the file and the quantity of comments and summary messages. (Bruised egos might be a greater problem for would-be Shakespeares who find their deathless prose is not so immortal, after all!) I think you will find it time well spent, in terms of the way the program helps make your writing more grammatically correct, clearer and concise.

## OTHER REVIEWS

# InfoLok
## InfoCode, Inc.

**For:** *IBM PC, AT, XT and compatibles (One or more disk drives, 128K, DOS 2.0 or higher)*
**List price:** *$149.00*
**Reviewed By:** *Doug Pencille*

As the use of the PC increases in the office environment, so does the need for a security system to protect the valuable information contained within the data storage devices. With the use of floppy disks the media can be locked away in a vault, but that is cumbersome and won't help the hard disk user. There are password protection schemes built into the popular business software packages, but how effective are they when someone is determined to break the code? What is keeping the local hacker from logging on to your system and browsing through the confidential files? While the hacker may be a one-in-a-million chance, what can be done about the disgruntled or dishonest employee who is using, copying, or altering confidential company records?

This all sounds like the kind of stuff we all say just happens to the other guy. InfoCode cites a survey done by the American Bar Association in which 75 Fortune 500 companies reported that annual losses form computer crime could reach $75,000,000. It was also noted that 78% of the loss occurs from individuals inside the organization.

*InfoLok* provides a way to keep your sensitive and confidential data out of the hands of unauthorized users simply, quickly, effectively and safely. Unlike other data security programs, *InfoLok* does not rely entirely on outdated password schemes. Instead, it uses multi-faceted programs with seven different command structures to provide maximum security.

The heart of the program is the file encryption

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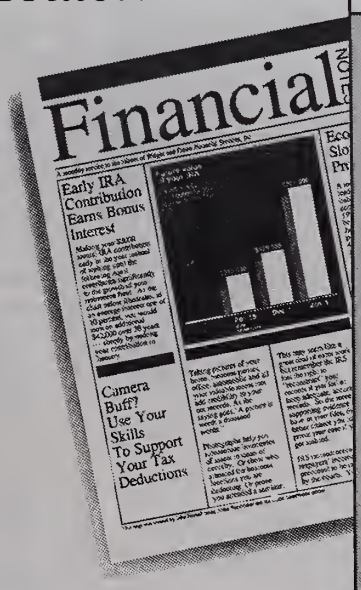

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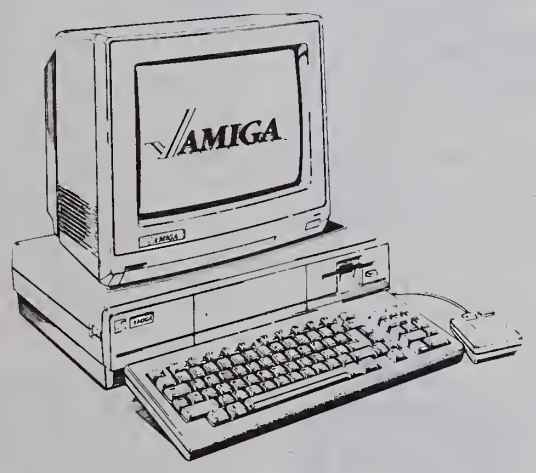


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## OTHER REVIEWS

procedure. Encryption is the process of taking the contents of any file (or the entire contents of a hard disk) and converting it into a scrambled and unreadable format. The file encryption is invoked by a user defined pass-key of up to 64 characters in length, making the possibility of breaking the password a bit difficult. The program uses an algorithm process to convert data files into meaningless text arrays. When the authorized user needs access to the file, the de-cryption command is invoked along with the pass-key, translating the file back to readable text.

The use of DOS commands ERASE and DELETE are not as definite as most people think when it comes to actually removing the files from the disk. These commands only remove the file names from the directory, leaving the actual data, for the most part, intact. Programs such as the Norton Utilities have features to restore the ERASED or DELETED files back to usable files. With this in mind, the idea of deleting a confidential file from disk is not so safe if the information could fall into the wrong hands. *InfoLok* provides a routine to completely over-write files with scrambled code, as well as remove them from the disk directory. The feature is called SUPERASE. It is like cutting up all the copies of a picture and then burning the negative.

Another utility operation of *InfoLok* is file hiding. In this procedure, the file listing is removed from the disk directory while the actual file contents are not affected. While this method of data security is not effective against even the novice computer thief, it does prevent accidental discovery by the typical user.

The transmission of data over the phone lines (telecommunications) has become an important part of business. The process of illegally obtaining this transmitted data has also become a big business. Transmitted data is usually sent in an ASCII format, one which can be understood by nearly all computer operating systems, making it easy to recover and read. *InfoLok* provides a way in which data can be sent with both speed and security in standard ASCII format. Files may be sent and received, encrypted or not. The program quickly converts the file for transmission and then reverses the process on the receiving end.

*InfoLok* is remarkably simple to use. The command structure is not complicated, and the use of menus makes the walk-through user feel at home. There are various options available to the user depending upon the levels of security needed and the number and variety of operators. The structure of the organization, from the clerical to the executive, can be accommodated with a multiple level set-up. The program can be automatically called up, for example, to encrypt or decrypt files whenever an authorized user logs on/off from a program. There is a safety feature to prevent the accidental re-encryption of encrypted files, and procedures to prevent the loss of data due to pass-key confusion and file recovery of damaged files due to power failure.

*InfoLok* is able to process, encrypt and decrypt, at the rate of about 20,000 bytes per second. That converts to a speed of 10 pages of text per second. Other statistics include the SUPERASE operation in a mere three seconds, and preparation of files for telecommunications in under 10 seconds. (Speeds ratings based on an IBM PC/XT.)

InfoCode has a truly non-compromising security package in *InfoLok*. It was written with all types of users in mind by providing the maximum in data security with a minimum in user controls. Every facet of this package was tested and performed flawlessly. With this level of security offered at under $150, there is not a business being operated on a PC that can afford to be without it. (InfoCode, 19 Union Square West, New York, NY, 10003.)

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| **RACORE** | | |
| Expansion Chassis Plus (Jr) | $675.00 | $499.00 |
| 256k Expansion Board (Jr) | $275.00 | $199.00 |
| **TALLTREE** | | |
| JRAM II Board | $219.00 | $159.00 |
| JRAM III 256k Board | $399.00 | $309.00 |

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| **BONUS** | | |
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| **DYSAN** | | |
| 10 ea DS/DD 48 trk | $69.00 | $35.00 |
| **MAXELL** | | |
| 10 ea DS/DD 48 trk | $65.00 | $21.00 |
| 10 ea DS/HD 96 TPI (IBM-AT) | $75.00 | $39.00 |

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| **AMDEK** | | |
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| 310A 12" Amber TTL (IBM) | $230.00 | $159.00 |
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| Max-12 12" Amber TTL (IBM) | $249.00 | $179.00 |
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| Smartmodem 1200B (IBM Int.) | $549.00 | $379.00 |
| Smartmodem 1200 (External) | $599.00 | $419.00 |
| 2400 Modem (External) | $899.00 | $619.00 |
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# Industry News To Help You Deal With Today's Rapidly Changing Computing Environment

By Hartley Lesser and Patricia Lesser

## Activision Acquires Infocom

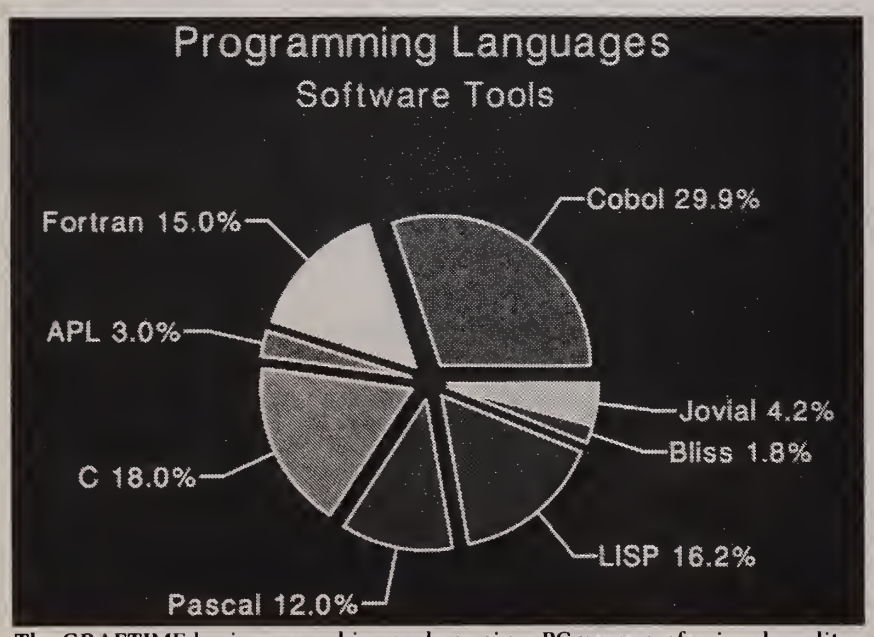
**Activision Inc.** (Mountain View, CA), will indeed acquire **Infocom** (Cambridge, MA). The merger is expected to be approved by the shareholders of Infocom and the board of directors for each firm by June 20th. This is a deal worth nearly $8 million to Activision, with the unification expanding the company's audience appeal. Activision will turn over 2,000,000 shares of common stock for Infocom's outstanding shares. with the latter company becoming a wholly owned subsidiary of Activision.

## Apple's Supercomputer

**Apple Computer** (Cupertino, CA) has ordered a **CRAY X-MP/48** supercomputer. The installation is scheduled to begin this March at Apple's HQ. The $14.5 million system will be used to simulate future hardware and software architectures and to accelerate new product development. Apple's executive vice president of product operations stated that by using the Cray and its powerful simulation capabilities, "we will be able to evaluate a greater variety of future product dimensions."

## Apple Pascal Upgrade

Apple II Pascal owners, don't forget May 31st of this year is the latest date for upgrading your original Apple II Pascal disk (labeled APPLE1) to Version 1.3, which supports the 3½" UniDisk. This upgraded version allows users to format a 3½" disk from within the Pascal operating system and to create larger programs without having to access multiple disks. Version 1.3 comes on both a micro and a 5¼" disk format. The original Apple II disk must be mailed with $125 to: Apple Computer Pascal 1.3 Upgrade, P.O. Box 306, Half Moon Bay, CA 94019.




**The GRAFTIME business graphics package gives PC users professional-quality graphics for business communications.**

## GRAFTIME

**Genigraphics Corp.**, (315) 451-6600, has unveiled the new **GRAFTIME** business graphics software package, designed to give PC users professional-level graphics for business presentation purposes and communication. Various colorful, creative business graphics are possible which, once created, can be output as printed copies, overhead transparencies or 35mm slides. Pricing is $395.

## Commodore Slashes Amiga Price

On March 25, Commodore International Ltd. announced a cut in the price of the Amiga 1000 personal computer, with color monitor, to $1295, a reduction of $500. The discount will be in effect from April 7 through May 31.

According to the San Francisco *Chronicle*, Commodore attributed the move to a desire to boost sales now that software for the machine is readily available. Other sources in the same article maintained that intense competition from the $999 Atari 520ST was also a factor.

Despite initial difficulties in positioning the machine appropriately in the marketplace, Commodore reported sales of over one million Amigas worldwide in the last quarter of 1985. The price reduction is expected to put the computer within the reach of more home users and thereby improve sales considerably.

## Rebates In Academe

**Apple Computer** (Cupertino, CA) has formally announced the initiation of two new programs that will allow full-time teachers and students to purchase an Apple computer through an authorized Apple Dealer and receive a cash rebate directly from the company. These programs start on April 1st, with rebates ranging from $75 for the purchase of an Apple IIc to $200 for the purchase of a Macintosh Plus. The student program runs through June 30th, and the teacher's program runs through September 26th.

## Boston Computer Society Prizes

**Boston Computer Society's Macintosh User Group,** in an effort to promote the creation and use of public-domain and shareware software products, has awarded $1,500 to five individuals who, the BCS group feels, have contributed the most to this field. Award recipients have created, and support, fully implemented productive software, and the software is distributed in a manner that allows the user to sample it at no risk. Those receiving the award are: Scott Watson, who developed the *Red Ryder* telecommunications program and the Lazsarus bulletin board program; Bill Atkinson, who produced two utility programs, *QuickFile* and *PaintMover*; Donald Brown, who developed the Mock package of programs (*MockWrite*, *MockTerm*, and *MockChart*); John Mitchell, who wrote *Fedit*, and Tony Nelson, who developed a RAM disk called *RAMStart*. We congratulate these winners of the Boston Computer Society awards.

### Corrections

If you're one of the many readers who read our article on Sidney, the Butler in a Box, last month, and have been trying frantically to contact MasterVoice, the Butler's manufacturer, you may have had some problems. As various kind-hearted readers pointed out, the number which ran with the article (800) 0-BUTLER, only works if you happen to be outside the state of California when you call. For those fortunate enough to already be here, the proper phone number is (213) 594-6581.

In our article on Debug, we inadvertently misprinted a rather crucial command. About midway through the article, the reader is instructed to type in L 100 a 5 a <return>. This is a bad idea. What you should do instead is type L 100 1 5 1 <return>, and the results should be much better.

*— eds.*

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*EasyLAN* network software allows PC users to share printer and disk peripherals. PCs are connected by *EasyLAN* cables plugged directly into your PC's standard serial communication ports and *EasyLAN* can be used with digital PBXs. *EasyLAN* supports geographically separated PCs using modems and dial-up lines.

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## Free Uploads On GEnie

**General Electric Information Service's GEnie** personal network has announced a three-month pilot program wherein users uploading public domain software programs into any of the RoundTables will not be charged network time during the file transfers. This pilot program will run through May 31st.

## Wrath Of Hercules

**Hercules Computer Technology** (Berkeley, CA) is none too pleased with the activities of two wholesale distributors, Chicago-based PC Network and The Diversified Group in Hawthorne, CA. Hercules claims a $100,000 suit against each distributor that unfair competition and copyright infringement occurred when the distributors allegedly duplicated Hercules graphics software and included the software in graphics boards, cloned offshore, which were then sold to customers as original Hercules boards. The Hercules manuals were also allegedly duplicated, and customers, buying what they believed to be true Hercules graphics cards, began complaining to the company when the boards developed problems.

Hercules has already won one such suit last August, against Dyna Systems of Santa Clara, CA, who were selling imported Hercules copies.

## *1-2-3* Upgrade Extension

**Lotus Development Corp.** (Cambridge, MA) has extended its upgrade program wherein *1-2-3* Version 1A users can trade up to Release 2 for $150. Originally scheduled to conclude on March 31st, the program will now continue through December 31st.

## Graphics Contest

**Manhattan Graphics** (New York, NY) has announced a contest for **ReadySetGo** users. The company is looking for the best ReadySetGo designs of ads, brochures, newsletters, annual reports, etc. A grand prize consisting of a Macintosh Plus and HD20 will be awarded for the best overall design. Runners-up in each category will receive $500 cash. Winning entries will also be displayed at MacWorld Expo in Boston, MA.

## WordStar For LANs

**MicroPro International** (San Rafael, CA) has announced the availability of LAN installation kits and licensing agreements for their *WordStar* word processing software for IBM PCs and their compatibles. These licensing agreements are aimed primarily at the corporate user of *WordStar*. Three of the leading LANs now supported for *WordStar* are 3Com's Ethernet, IBM's PC Network and Novell's Netware. Suggested licensing fees are $160 per workstation for three to nine workstations and $140 each for 10 or more workstations, after the purchase of one *WordStar* package at the suggested retail price of $350. For *WordStar Professional* users, the fees are $225 and $195 respectively, with the product retailing for $495.

**MicroPro International now offers LAN installation kits and licensing agreements for WordStar.**

## Rumors

**Apple** is rumored to be preparing an **SCSI** hard disk drive for its **Macintosh Plus** computer, one that is allegedly as much as **seven times speedier** than the current Hard Disk 20. Should this talkware become fact, one could expect to see a decrease in the pricing of hard disk drive systems for the Mac, much as has been witnessed in the IBM micro environment . . . **Ashton-Tate** hopes to find gold in the hills of Culver City as it prepares to release a **new database product.** Given the code name **Black Gold** in-house, this is a pure database program that is almost as powerful as the company's standard-bearer, *dBASE*. . . Look for a powerful **IBM micro compatible desktop publishing program** from **Ventura Software** to be released soon. A 640K microcomputer system could format as many as 100 pages with this program, which should have a list price of less than $700 . . . **Commodore Business Machines** has managed a **loan of $135 million** from a consortium of international financial institutions. The company now has until March of '87 to reverse its current negative financial condition. Commodore did manage to repay over $51 million of its debt during its first half, which ended December 31, 1985 . . . Ready for another word? How about **Microsoft Word, Version 3.0**? The only real change is the inclusion of an outline processor in the program . . . **Big Blue** may be blue about losing the Internal Revenue Service laptop computer award, but that won't halt their release of their **PC Convertible** computer. According to some sources, IBM's laptop will also sport an **external micro drive,** which will be used to interface with other members of the IBM microcomputer family . . . **Xanaro Technologies** in Toronto, Canada, now has nearly a dozen bidders clamoring to acquire rights to its **Ability** program. *Ability* is an integrated software package and is currently up for sale as part of the bankruptcy auction to help settle the more than $8 million in company debt.

## Microsoft Moves

**Microsoft Corp.** has accomplished a major move of its facilities. Their new address is: 16011 NE 36th Way, Redmond, WA 98052-6399. The company's new mailing address is: 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717.

## New Home For MicroSpeed

**MicroSpeed Inc.** (Fremont, CA) has moved to a new and larger facility at 5307 Randall Place, Fremont, CA 94538. The new headquarters contains about 5,000 square feet; the move was necessitated by the demand for the company's **Fast88** accelerator board for IBM micros and compatibles.

## Laser Printer Price Falls

**QMS, Inc.** (Mobile, AL) has announced the price of its **ConceptWriter** VDI intelligent graphics laser printer has been reduced to $4,495, down $1,500 from its previous retail price. The ConceptWriter may be purchased independently or as part of the company's CONCEPT 100 personal publishing system.

## Stanford's Wall Street Wizards

**Synapse Software** (San Rafael, CA), a subsidiary of Brøderbund Software, last year released a stock market simulation game entitled *Wizard of Wall Street*. A contest was arranged between Stanford University and the graduate business schools of Harvard and Wharton to see which team could earn the most money playing this simulation. Played on IBM PCs, the contest ran February 7th and 8th, with each school starting the game with $1 million to invest. When the scores were tallied, Stanford had parlayed its money into $21,469,627. For their efforts, Stanford competitors were awarded $1,000 in cash, and all three schools were given engraved crystal balls.

## Tandon Vs. ITC

**Tandon Corp.** (Chatsworth, CA) intends to appeal to the Court of Appeals of the Federal Circuit a ruling handed down by the International Trade Commission (ITC) that microcomputer flexible disk drives imported into the US by Mitsubishi Electric Corp. did not infringe on a basic Tandon patent. The ITC, in an

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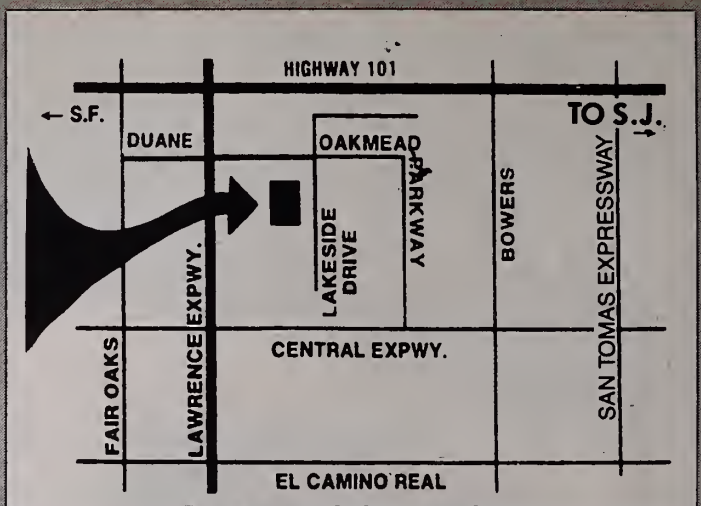


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| Okidata 192 | 369 |
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| EXPRESS i MODEM 300/1200 Internal w/Link | 199 |
| VOLKSMODEM 12 300/1200 EXT | 199 |
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| AMDEK COLOR 600 | 399 |
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| QUIMAX PX IV COLOR | 399 |
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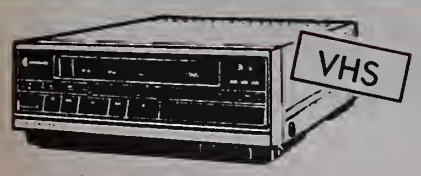


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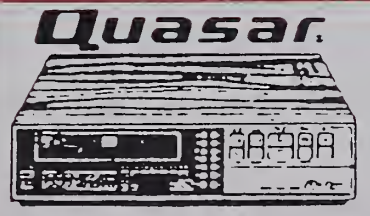


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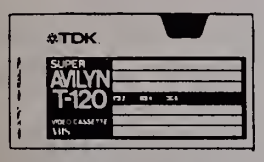


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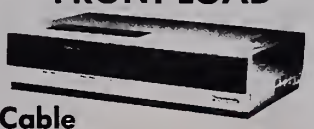

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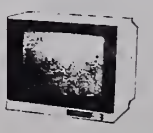

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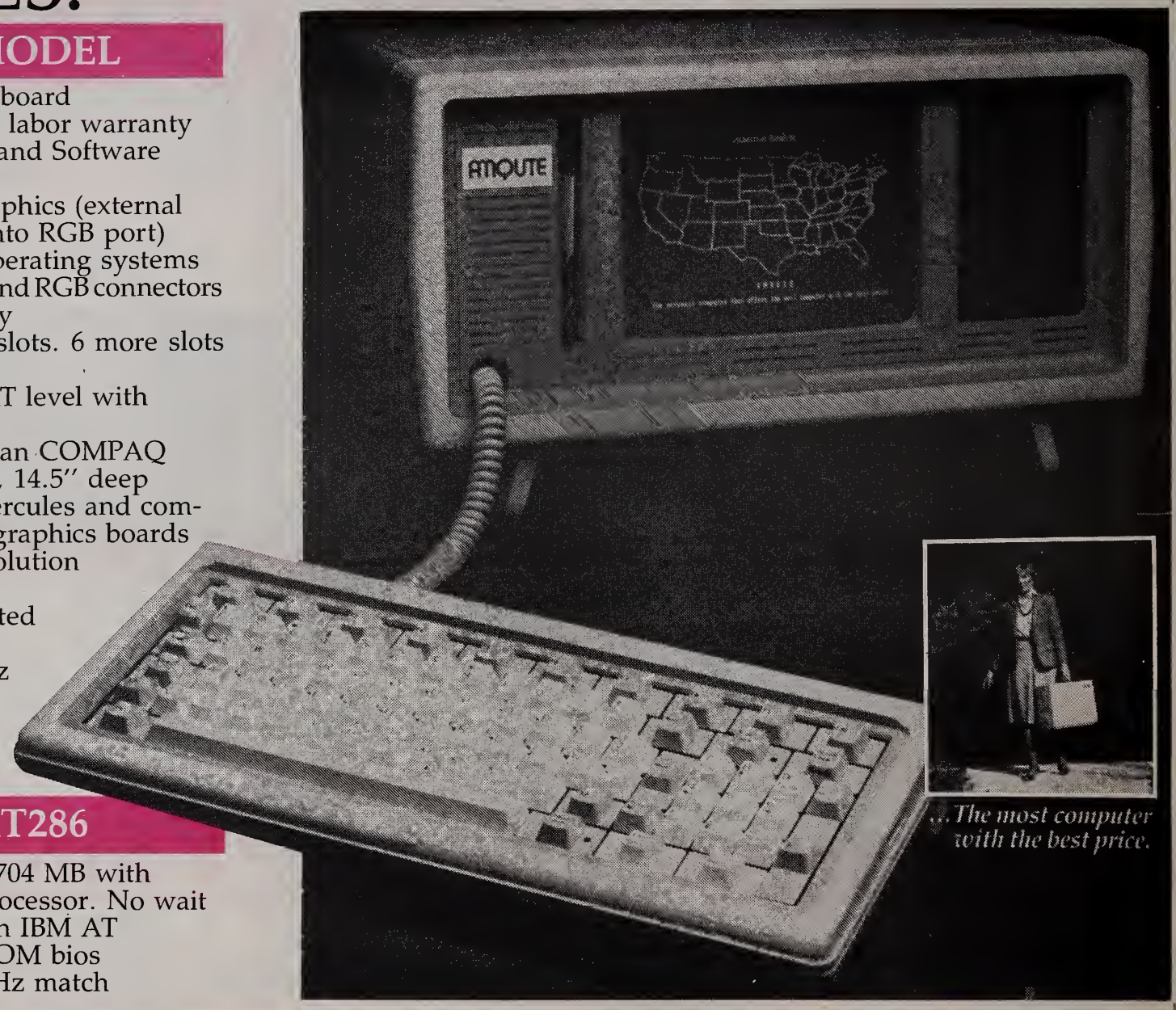




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earlier ruling, upheld the validity of the Tandon patent, which covers double-sided flexible disk drives. The company claims the ITC decision is in error, and that the ITC determination will be reversed by the Federal Circuit Court, which has jurisdiction over patent appeals from all federal circuit courts as well as from the ITC.

Tandon is also finding itself the target of such a suit. Sanders Associates, Inc. and Billings Computer Corp. filed suit against Tandon over ownership of Tandon's patent for double-sided floppy disk drives. Tandon states the suit is without merit and noted that this suit was filed nine years after Tandon was granted the patent, which allows recording on both sides of a floppy disk. In the spring of 1985, Sony Corp. unsuccessfully brought up the allegation of Billings/Sanders ownership during ITC hearings; the ITC rejected the allegation.

## Zenith's Government Contracts

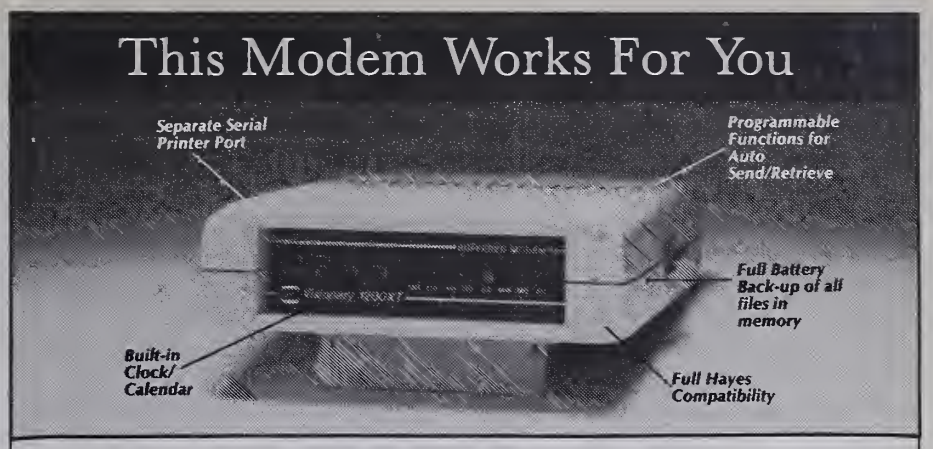
**Zenith Data Systems,** (312) 391-8949, has been awarded two enormous contracts. The first contract, with the Internal Revenue Service, is for an estimated $27 million worth of laptop computers. Zenith is to provide approximately 15,000 – 18,000 Z-171 Portable Personal Computers over the next 18 months, as well as software and technical support and maintenance for these systems through 1995. The Z-171 computers will be used by IRS field auditors to access the agency's mainframe computer files to retrieve records, review books and file reports while at the same time conducting on-site tax audits. This is a surprise to some analysts who thought IBM would be the recipient of this contract.

Zenith was also awarded the largest microcomputer contract ever awarded by the US Government. The $242 million contract stipulates that ZDS is to supply, over the next three years, an estimated 90,000 Z-200 PCs for use worldwide by the US Air Force, Navy, Army and Marine Corps. In addition, other Department of Defense agencies can purchase PCs against this contract. The selected models in ZDS's Z-200 PC series use an Intel 20826 processor and runs virtually all software written for the IBM PC, XT and AT computers. The contract calls for three Z-200 versions: a dual floppy disk drive unit, a dual-drive unit with a 20 MB hard disk drive, and a hard disk drive unit with additional memory. Each Z-200 will be delivered with a variety of peripherals, including printers, plotters and monitors. In addition, Microsoft's Windows will be shipped with all computers on the contract.

SmarTerm 240 lets an IBM PC emulate a DEC VT240 graphics terminal.

## SmarTerm 240

**Persoft, Inc.,** (608) 273-6000, has introduced **SmarTerm 240,** the first terminal emulation software to combine DEC ReGIS and Tektronix graphics emulation in a single software product. A multifunction communications software package, this offering also includes emulation of popular text terminals and offers data file transfer capabilities. This latest addition to the *SmarTerm* series of products allows an IBM micro to be used as a graphics terminal to connect to CAD/CAM applications and mainframe graphics packages such as SAS/GRAPH, TELLAGRAPH, RS/1, DISSPLA, and PLOT-10. *SmarTerm 240* enables an IBM micro to be used as a DEC VT240 graphics terminal. The list price is $295.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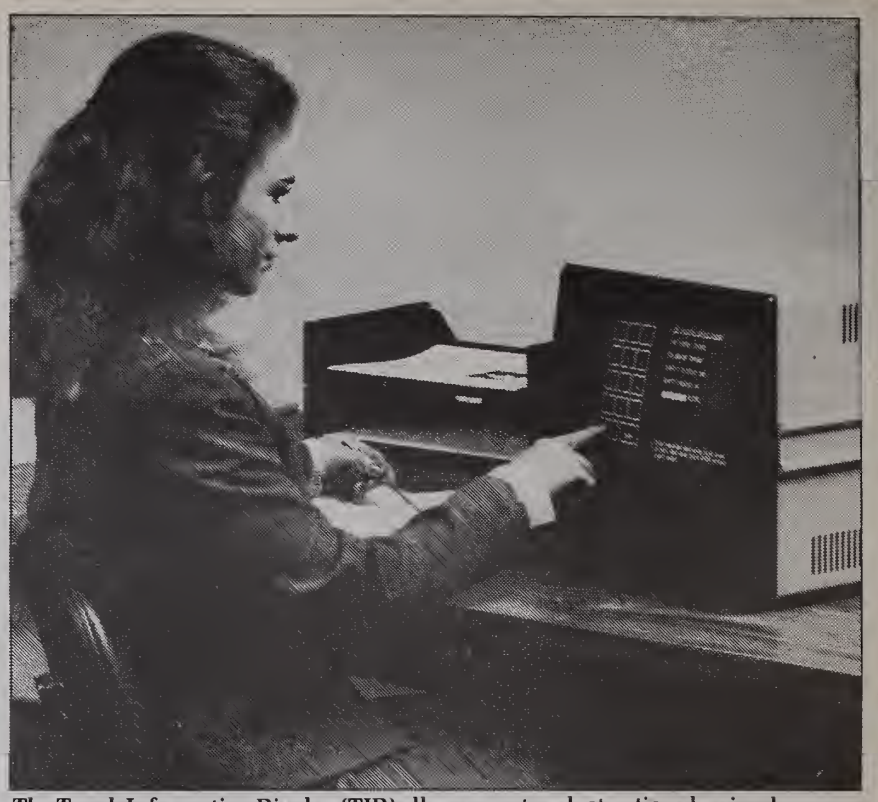

The Touch Information Display (TID) allows user to select options by simply touching the infrared touch screen.

## Touch Information Display

**Electro Mechanical Systems, Inc.,** (217) 359-7125, has introduced **Touch Information display (TID).** The TID displays pages of text in which the user simply makes a selection via an infrared touch screen. This creates a versatile and user-friendly interface for applications that require accurate and rapid data control. Single unit pricing is $1,500.

## Special for AII Users

**Titan Technologies Inc.** (Ann Arbor, MI) and **Pinpoint Publishing** (Emeryville, CA) have initiated a special bundling offer that runs through July 15th of this year. The offer bundles every Titan Accelerator IIe replacement coprocessor board with a free *Pinpoint* desktop accessories software enhancement package. Both products will be offered at one special retail price of $299, a saving of $89. Existing, registered Accelerator IIe owners can purchase *Pinpoint* at a special low price as well.

## NEW PRODUCTS

### IBM & COMPATIBLES

### XTREE 2.0

**Executive Systems, Inc.,** (213) 936-5729, has released the first product update to its **XTREE** program, a powerful MS-DOS and PC-DOS file and directory organizer. Version 2.0 is designed to simplify file and directory handling by providing single keystroke commands to access, delete, rename, view, move, list, or show any and all files within any and all directories or a floppy or hard disk.

### Pro Command

**Innovative Technology, Inc.,** (613) 738-3375, has introduced **ProCommand,** an extension to DOS that attaches itself to the command shell and handles all of the batch file execution for DOS. Current batch files need not be changed. They will operate in exactly the same way as before, and they will actually run faster. Also incorporated are TopView commands for controlling windows, with the program compatible with TopView, GEM, Windows and DesqView. A minimum of 45K RAM is required, and the program sells for $89.

### TIMESLIPS 2.1

**North Edge Software Corp.,** (617) 468-7358, has enhanced its **TIMESLIPS** memory resident time and expense tracking and billing system to include its own report and graphics generators. Version 2.1 adds features such as full retainer and trust accounting, over 4,000 billing formats, automatic numbering of invoices, and the ability to mark and report time records as "Work In Process." No graphics card is required for this program.

### Print Key

**North West Software Assoc.,** (509) 928-2361, has introduced the **PrintKey** Printer Enhancement Utility. This is a memory resident program for IBM micros that enhances communication between computer printers and software. By residing in memory between the computer and the peripheral, *PrintKey* provides ac-

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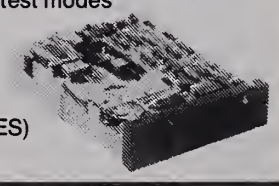

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cess to advanced software-controlled printing features that are otherwise inaccessible from most popular applications software. This software allows the user to create custom printer commands tailored for specific printers and specific tasks. These printer commands are known as macros, and, once programmed, become available from within other software by placing macro characters in the documents to be printed. Price is $89.95.

## PforCe

**Phoenix Computer Products Corp.,** (617) 762-5030, has debuted **PforCe,** a comprehensive library of object-oriented functions and subsystems for the C programming language. *Pf*orCe, which is written in C and assembly language, offers programmers both high- and low-level functions that are fully integrated, optimized, debugged and ready-to-use. High-level functions allow programmers to manipulate windows, screens of fields and "Lotus-like" menus, and databases as objects, so code can be written faster and more economically. The object-oriented design ensures the independence and maintainability of individual modules and facilitates a structured programming style. *Pf*orCe is priced at $395 and is available for Microsoft, Lattice, Computer Innovations and Wizard compilers.

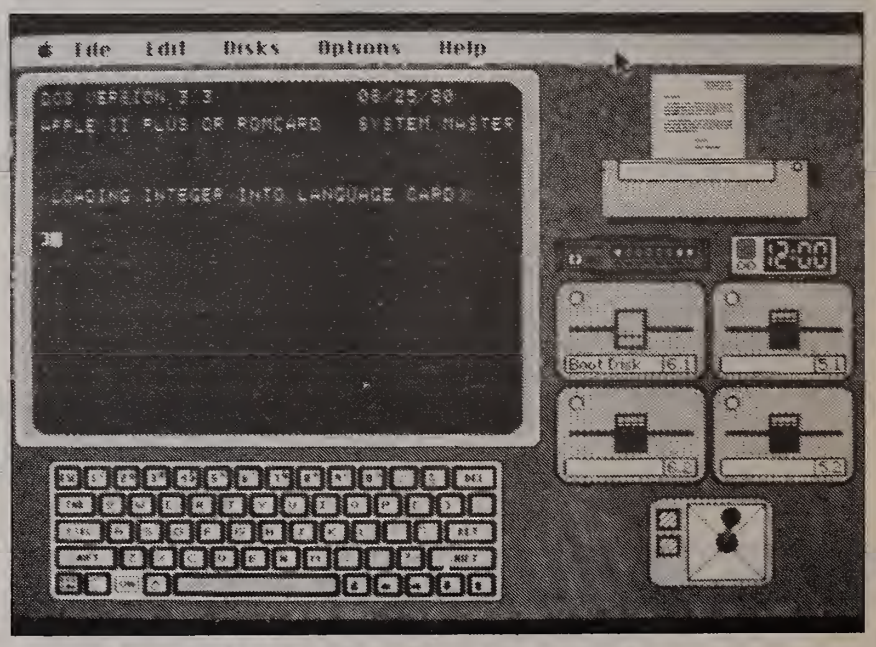
## Word Finder 3.1

**Writing Consultants,** (716) 377-0130, has announced shipments of Version 3.1 of the **Word Finder** thesaurus software program. This new release features 15,000 main word entries and 220,000 synonyms, three times larger than the database used in most other electronic thesaurus programs. *Word Finder 3.1* also has 4,000 more main word entries than the printed Random House Thesaurus College Edition. Price is $79.95.

**MACINTOSH**

## ReadySetGo 2.1

**Manhattan Graphics,** (212) 989-6442, has introduced **ReadySetGo** Version 2.1. The new release features options like Keyboard Scrolling (allows for quick scanning of documents without invoking Show Page), Insert Blocks (linked blocks may be inserted in the middle of existing text chains), More Pages (users can now build documents of up to 40 pages), More Keyboard Commands (new command key function reduces mouse dependency), and a New Manual (an updated manual with full documentation of all the new features). The suggested retail price for Version 2.1 is $195. For owners of Version 2.0, the upgrade price is $30, plus $9.95 for shipping and handl-




**II In A Mac software allows Macintosh users to run Apple II software.**

## II In A Mac

**Computer Applications Inc.,** (919) 846-1411, has debuted **II In A Mac** software, the first in a series of Apple II software emulators planned for the Apple Macintosh, Commodore Amiga, Atari 520ST and IBM micros. The *II In A Mac* software provides the 512K Mac user with the capability to run the thousands of Apple DOS 3.3 and ProDOS programs currently available for the Apple II micro. Because the *II In A Mac* package includes communications software for both the Apple II and Macintosh, transferring software into the Mac is an easy process. Additionally, the company will support this product by providing Library disks that contain the best of over 13,000 Apple II public domain programs for only a disk duplication fee, postage and handling. Pricing is $69.95 and the product is now available.

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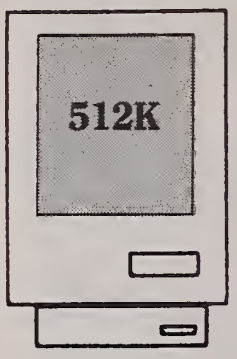


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ing. Owners of Version 1.0 may upgrade for $60, plus $9.95 shipping and handling charges. Version 1.1 has a suggested retail price of $195. Owners of *Multiplan* 1.0 through 1.02 may update for $25.

## Multiplan 1.1

**Microsoft Corp.**, (206) 828-8080, has started shipping an enhanced version of Microsoft **Multiplan** for the Mac. This is Version 1.1 and incorporates a number of enhancements, including improved printing options, seven new financial functions, variable fonts and font sizes, and the addition of a second spreadsheet window.

## Data Libraries For MacLightning

**Target Software, Inc.**, (305) 252-0892, has announced the release of at least four new data libraries for the *MacLightning* desk accessory. These libraries include a 45,000 word *Roget's Thesaurus*, a Programmer's Reference Set, a Medical Dictionary and a Legal Dictionary, all of which can be accessed as D/A's with the *MacLightning* engine.

## Pascal Extender

**Invention Software Corp.**, (313) 996-8108, has introduced the **Pascal Extender** and **C Extender** compiled libraries for the Mac. These offerings greatly simplify the task of programming the Macintosh interface and reduce development time. They support virtually all standard toolbox commands, and add new high and medium-level routines for creating and manipulating windows, menus, controls, scrollbars, dialog and alert boxes (over 100 routines added to MacPascal interpreter, and over 60 to the compilers).

## NETWORKING/ COMMUNICATIONS

## SmartCom II-Network

**Hayes Microcomputer Products, Inc.**, (404) 449-8791, has unveiled **SmartCom II** for the PC Network. This is communications software that provides PCs on an IBM PC Network the ability to share modems and asynchronous communications ports with all of the functions. The new product includes both the *SmartCom II* communication workstation software and Hayes' implementation of serial server functions for the PC Network. *SmartCom II* for the PC Network is compatible with DOS 3.10 and the NetBios interface. With this software, PCs can emulate VT52, VT100/102 or Televideo subset terminals. Also featured is Hayes Verification and XMODEM protocols-error correcting file-transfer-protocols that ensure accurate data transmission. *SmartCom II* for the PC Network contains five User's Guides, one System Guide, and one program disk for an estimated retail price of $599.

## HARDWARE/PERIPHERALS

## Econo 60

**CMS**, (714) 953-0470, has announced a low-cost 60 MB internal hard disk subsystem for IBM micros that carries a suggested retail pricing of $1,795. The subsystem includes controller and cables, and an optional software package that breaks the 32 MB file and volume barrier of MS-DOS. Designated the **Econo 60**, this new, full-height, 5¼" drive is manufactured by Seagate to CMS specifications, which include a 37 ms. average access speed and a 5 MB/second transfer rate. CMS adds a proprietary controller to the subsystem. The product is immediately available.

## MacBuffer

**Ergotron Inc.**, (800) 328-9839, has released **MacBuffer**, a microprocessor controlled hardware buffer system with 256K to 1MB of RAM designed exclusively for use with the Mac, Mac Plus, and the Imagewriter I and II. *MacBuffer* also includes a new ImageWriter driver that increases the data transmission rate from the Mac to 57.6 kilbaud, six times faster than normal. The product is designed to work with all Macintosh software and also features the ability to connect two Macs to one ImageWriter. Pause and Local copy modes are also supported. Pricing, depending upon the amount of RAM, ranges from $299 to $699.

## HabaDisk 800

**Haba/Arrays, Inc.**, 818/994-1899, has released the first 800K, dual-sided, variable speed, micro disk drive for the Mac. Called the **HabaDisk 800**, this 3½" drive stores twice as much data as a single-sided Mac drive and triples the storage capacity of single-drive Mac systems. The HabaDisk 800 is also available as an internal upgrade kit. With an 800K internal drive, users can create fonts and desktop accessories they need or want, with room to spare for large application programs. Pricing for either offering is $399.

## Intel 80287-10 Coprocessor

**Intel Corp.**, (408) 496-4580, has debuted a 10 MHz version of the 80287 numeric coprocessor. Intel's new **80287-10** device operates at up to twice the speed of older versions and is compatible with all software that uses Intel's numeric coprocessors. The faster 80287 coprocessor is manufactured with Intel's patented 1.5-micron HMOS-III (high-performance metal-oxide semiconductor) technology. HMOS-III permits higher speeds and a 50 percent smaller die size than was possible with earlier fabrication processes. The 80287-10 features an 80-bit register set for internal calculations in systems based on Intel's 16-bit 80286 and 32-bit 80386 microprocessors. In addition, the 80287-10 is object code compat-

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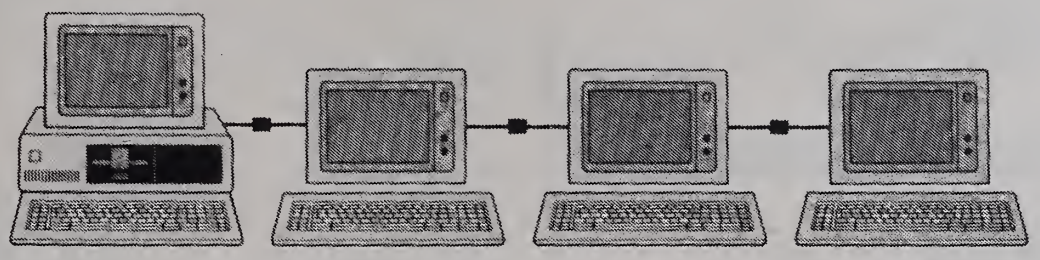

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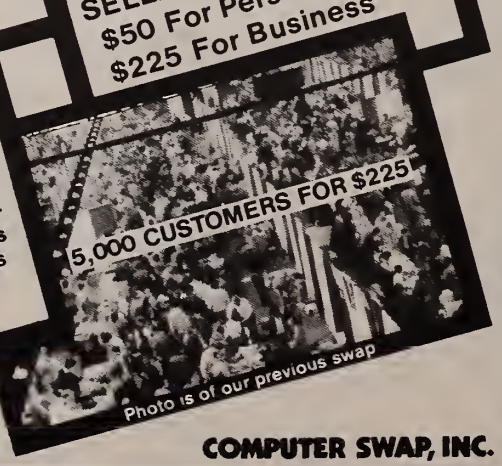


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ible with the 8087 numeric coprocessor. Production quantities will be available this month at $350 in quantities of 100.

## SMF/AT210

**Sigma Information Systems,** (714) 630-6553, has made available the **SMF/AT210** multifunction module, an AT upgrade that now offers compatibility with both Xenix and Unix software systems, as well as PC-DOS, and is designed with the capability of transforming an AT into a powerful multiuser system. The SMF/AT210 supports standard Xenix and Unix drive routines as well as special application drivers designed by industry software houses. The module is available with 128K to 4MB of memory, supporting two to seven users (six dumb/smart terminals plus the console terminal) and a parallel printer. The board plugs into one AT expansion slot and operates at speeds up to 9600 baud. The price of the SMF/AT210 with 128K of memory, one serial port and one parallel port is $569.

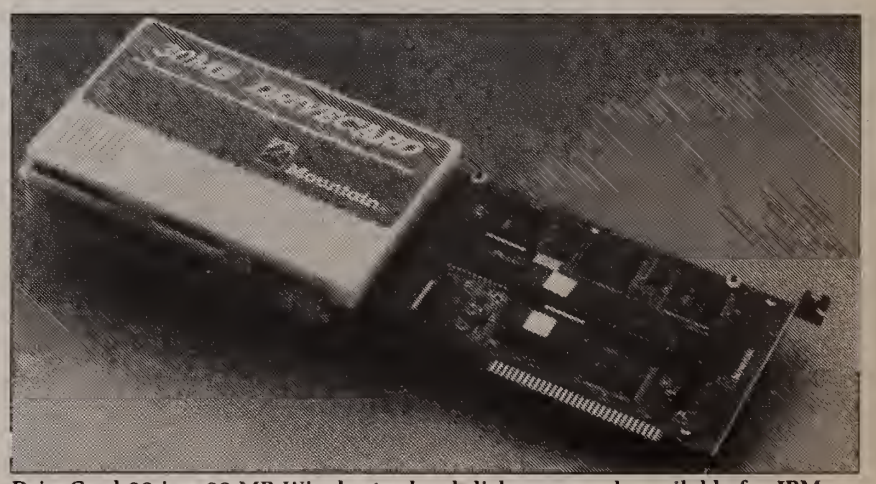
## Compaq Add-Ons

**Tecmar, Inc.,** (216) 349-0600, has debuted seven computer peripheral products that are fully compatible with the new Compaq Portable II PC. These products include: **Q60H,** a high performance streaming tape backup unit; **Maestro,** 2.5 MB multifunction board that enhances the Portable II's power and speed for composing large spreadsheets and documents; **MegaFunction,** an advanced add-on board that combines standard multifunction capabilities with the speed of a 1.25 MB non-volatile RAM disk and features an independent power supply, a parallel printer port, a serial port and a clock/calendar; **640 Plus,** a Lotus-certified memory board that provides 256K to 2 MB of memory to expand the size of *1-2-3* and *Symphony* spreadsheets, databases and files; **5251/11 Emulator,** a powerful hardware and software package that allows the Portable II to communicate with IBM System 34/36/38 series minis; **Phonegate 2400,** a 2400 baud internal modem and telephone interface that features a Hayes compatible command set, support for a telephone set, off-hook detection, touch tone decoding pulse and touch tone dialing; and **eSCAN,** a scanning image digitizer and optical character reader that can capture, store and reproduce virtually any image on paper to Portable II files.

**GAMES/ EDUCATIONAL/HOME**

## Balance Of Power/IBM

**Mindscape Inc.,** (312) 480-7667, will also soon be releasing its widely acclaimed simulation of geopolitics in the nuclear age, **Balance Of Power,** in IBM PC format. With Microsoft Windows as the user interface, the IBM PC version creates a gameplay environment virtually identical to that of the Macintosh computer. In this simulation, players assume the role of either the President of the United States or the General Secretary of the Soviet Union for a fictional, eight-year period in this one- or two-player game. The players' goal is to enhance their countries' prestige and avoid nuclear war. They can support friendly governments, move against unfriendly governments and try to foil the same efforts of their opposing superpower. *Balance Of Power* for IBM micros and compatibles will be released in June of this year at a suggested retail price of $49.95.




**DriveCard 30 is a 30 MB Winchester hard disk on a card, available for IBM and compatible machines.**

## Drive Card 30

**Mountain Computer, Inc.,** (408) 438-6650, has released the **DriveCard 30,** a complete subsystem that integrates two 3½" disks with controller electronics. The DriveCard 30 is fully compatible with IBM micros and compatibles and runs under PC-DOS and Xenix operating systems. LAN compatibility includes 3Com and Novell, among others. In an IBM XT, DriveCard 30 requires one card-cage slot, and one and one-half slots on other models. The suggested retail price is $1,449.

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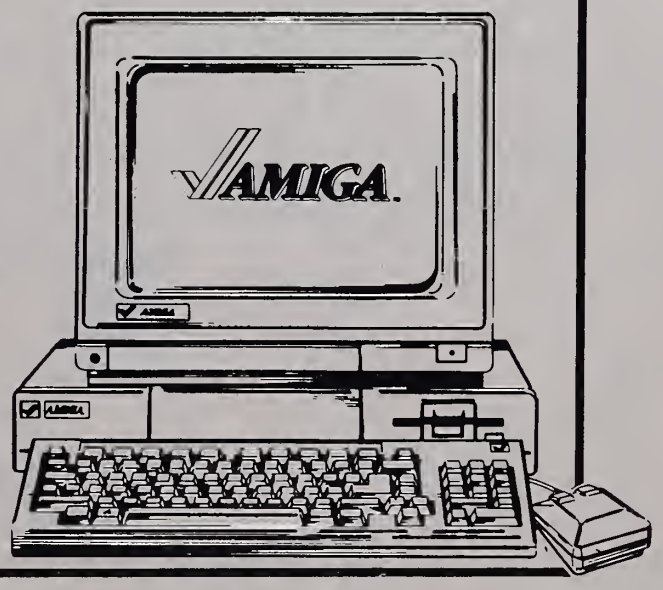


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**April 3–6 West Coast Computer Faire,** San Francisco. Call The Interface Group, (415) 364-4294 or (714) 487-2300 for information.

**April 3 Printers and Plotters.** Class, 7:30-10 pm, Berkeley Systems, 3014 Shattuck Ave., Berkeley. $15 class fee. (415) 540-5435 / 644-1930 for information.

**April 4–5 Amiga Faire.** Ste. Claire Hilton, San Jose. Admission free. Call (408)2295-7334 for information.

**April 5 North-West Computer Swap.** L.A. County Fairgrounds, Pomona. Contact Computer Swap Inc., (408) 266-6788 or (800) 252-7927/(800) 2LA-SWAP for information.

**April 8–May 31 Exhibit of Computer Art by James Dowlen.** Computer Arts Institute, Corte Madera. Tuesday-Saturday, 12 - 6 pm. (415) 924-6955. Free.

**April 11 Computer Arts Institute Open House.** Corte Madera. Free. Preregistration required due to limited space. Call (415) 924-6955.

**April 12 CADCAM Business Seminar.** 10am-12 noon. Seminar and demo featuring AutoCAD software and Nicolet plotters. MicroFlash Training Center, 1110 Burnett Ave., Concord. Limited seating, preregistration required. $15. Call Dennis Bowman for information and registration: (415) 680-1157.

**April 12 North-West Computer Swap.** Santa Clara County Fairgrounds, San Jose. Contact Computer Swap Inc., (408) 266-6788 or (800) 252-7927 for information.


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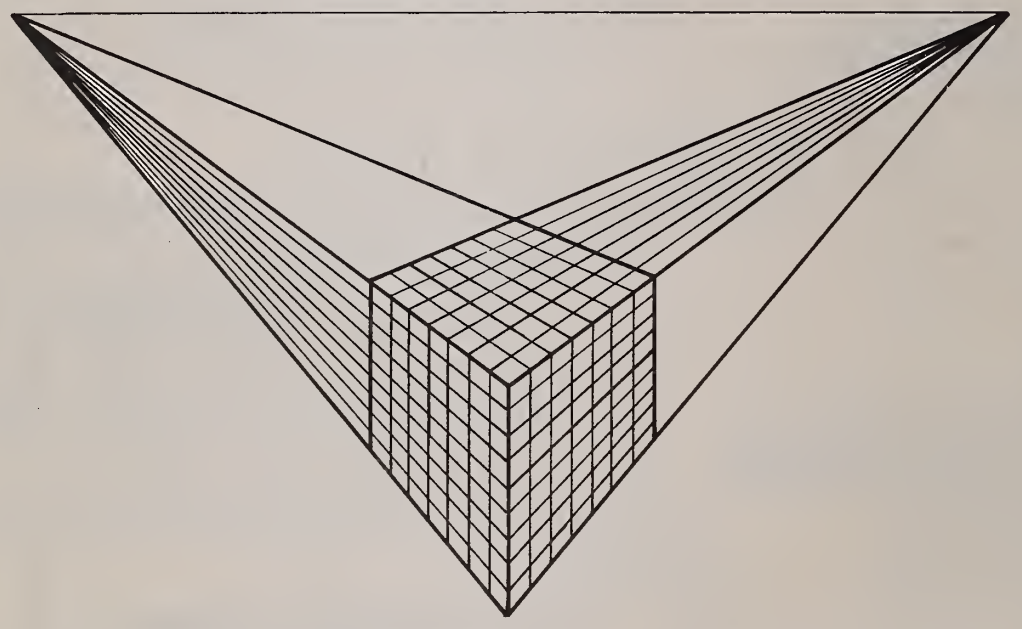

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**April 15-16 MacFest.** Tressider Union, Stanford campus. Call Stanford Macintosh User Group at (415) 725-0152 for info, or write SMUG at P.O. Box 6508, Stanford, CA 94305.

**April 16–19. "The Development and Marketing of Software Products."** Conference sponsored by Software Publishers' Association, San Francisco. Call SPA at (202) 452-1600 for information.

**April 19 Network Business Seminar.** 10am-12 noon. Seminar and demo featuring networking, hardware and software products of Novell, Inc. MicroFlash Training Center, 1110 Burnett Ave., Concord. Limited seating, preregistration required. $15. Call Dennis Bowman for information and registration: (415) 680-1157.

**April 26 Vallejo Computer Swap.** Solano County Fairgrounds, Vallejo. Call Golden Gate Shows, (415) 388-8893 for information.

**May 2–4 Datawest 3.** Exposition of business computers, software, systems and services. Pasadena Convention Center, 300 E. Green St., Pasadena, CA. Contact Cliff and Doug Mitchell, Information Processing Group, (818) 792-5111.

**May 3 Bay Area Computer Swap.** Cow Palace, San Francisco. Microshows, (415) 340-9114 for information.

**May 10 North-West Computer Swap.** L.A. County Fairgrounds, Pomona. Contact Computer Swap Inc. (408) 266-6788 or (800) 252-7927/(800) 2LA-SWAP for information.

**May 11 – 15 Computer Graphics Conference and Expo.** Anaheim Convention Center. (800) 225-NCGA for information.

**May 13–16 Effective Skills For Technical Management.** Class, Palo Alto, Sponsored by Integrated Computer Systems. Call (800) 352-8251 for information, (800) 421-8166 outside CA.

**May 21 Legal Protection For The Software Writer.** Workshop sponsored by Bay Area Lawyers for the Arts. (415) 775-7200 for information.

**May 23-24. MicroTimes Presents Desktop Publishing Exposition '86.** Hyatt Regency, Pacific Room, San Francisco. Free admission. Call Golden Gate Shows, (415) 388-8893 for information.

**May 24-25 San Francisco Computer Expo.** The Concourse, 8th and Brannan. Call Golden Gate Shows, (415) 388-8893 for information.

**May 31 Sacramento Computer Swap.** Cal Expo. Call Golden Gate Shows, (415) 388-8893 for information.

**June 7 San Jose Computer Swap.** San Jose Convention Center. Call Golden Gate Shows, (415) 388-8893 for information.

**June 10–13 Unix: A Comprehensive Workshop.** Four-day workshop. Palo Alto. Sponsored by Integrated Computer Systems. Call (213) 417-8888 for information.

**June 14–15. Golden Gate Computer Expo.** Oakland Coliseum. Special section: Computers and Accounting. Call (415) 388-8893 for information.

**June 17–20 Programming in C.** Four-day workshop. Palo Alto. Sponsored by Integrated Computer Systems. Call (213) 417-8888 for information.

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# Aegis Enters The Amiga Age

By Jody Baram

**Bill Volk, VP of Technical Operations: "I think we tend to be feature-crazy in the software industry. Everyone pumps features into products, hoping that the number of features will determine whether the product is better or not."**

Aegis Development, Inc., a three-year-old company located in Santa Monica, has become one of the software industry's fastest-growing publishers, with titles for the Commodore Amiga, Apple Macintosh, and soon the Atari ST and TT. Aegis plans an ambitious schedule of no fewer than 10 product introductions this year, six of which are for the Amiga.

Says Michelle Mehterian, vice president of Creative Services, "Together with the Commodore Amiga computer, Aegis Development is setting new standards in software performance. By providing professional, cost-effective programs which were, until now, only usable on expensive mini and mainframe computers, new markets open up for computer graphics. Aegis is committed to making sure that market is well served by providing excellent software for excellent hardware."

Dave Barrett, president of Aegis, is an industry veteran who was involved in many early computer-related ventures in the Los Angeles area, including several with the late George Tate of Ashton-Tate. In founding Aegis, Barrett assembled a team with talents in programming, marketing and financial wizardry.

Aegis entered the Amiga arena when it obtained several important software packages from Island Graphics. Island developed *GraphicCraft*, one of the first Commodore-label Amiga programs available (however, it must be noted that Commodore made numerous alterations in the product before it reached the market). Barrett says that Commodore's decision to concentrate on hardware development rather than software publishing created the opportunity for Aegis to market Island's newer packages, now called *Aegis Images* and *Aegis Animator*. Aegis is currently in the process of negotiating a longer-term relationship with Island Graphics to produce additional Amiga software.

According to Barrett, early software development problems led Commodore to pull back from software marketing, enabling Aegis to take advantage of the Island Graphics software marketing opportunity: "Island's major problem with the Amiga was that they got into the game much too early. They went through a lot of trials and tribulations — they were developing a series of code and found out there was a new revision in the software that had come out four or five days later, rendering all the code they had written useless. There were definitely frustrations on both parts...If Island had become involved in May of '85, it would be a completely different story in terms of their delivery capability and maybe even the end result."

These developments have put Aegis in a fortunate position; there's little doubt that these products are

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PHOTOS: TROY MABEN

**High-level strategy meeting: president Dave Barrett (center) with vice presidents Bill Volk (l) and John Skeel.**

**Copy protection, says Bill Volk, interferes with the usefulness of the product: "The software industry has to realize that creating software is like creating any other commodity. One has to be able to use it. Right now many software manufacturers feel that they are providing a service. They don't treat their software like a product."**

going to do well: "*Images* is a more versatile and powerful program than *Deluxe Paint* [Electronic Arts' paint program]," according to Barrett. *Images* is a professional's package. Both programs take advantage of the Amiga's hardware, but *Images* has some advanced features like Wash, Smear, and Paint Under. Wash eliminates rastering and provides a watercolor effect. Smear allows mixing of colors. Paint Under permits drawing without affecting specified colors. There are 20 different brushes and 16 customizable patterns available. Although the Amiga offers only 640 by 200 or 320 by 200 resolution, a palette of 32 colors out of a possible 4096, along with an anti-aliasing (jagged edge smoothing algorithms) feature, produces remarkably sharp pictures. Air Brush is a true density airbrush with adjustable spread. Other exciting features include Transparency, Swap Screens, Grids, Supermove (which includes rotate, enlarge, shrink cut, copy and drag options), Magnify (which allows work at the pixel level), and Pantographic Drawing (which allows subtle and creative duplication of images).

Bill Volk, VP of Technical Operations, is more concerned with the user interface than with bells and whistles. "I think we tend to be feature-crazy in the software industry," he observes. "Everyone pumps features into products, hoping that the number of features will determine whether the product is better or not.

"We have a different interface. *Deluxe Paint* has a traditional Macintosh paint interface, which is a sidebar of commands. That sidebar can be removed, but you need to have it on the screen in order to access commands. We have a similar animal called the fast menu. Its advantage is that it can be dragged on the screen, moved out of the way, and can be gotten rid of. Once it's been removed, you can still get to all the commands from the standard Amiga menu.

"Aegis has decided to stick to the standard Intuition [operating system] interface. We found that if you use a lot of different software packages you expect to see menus when you hit the right mouse button. *Deluxe Paint* doesn't do this."

Another product, *Aegis Animator*, can turn an Amiga into a full-function animation workstation, capable of creating many types of moving computer/video storyboards. Current animation products use a technique called cell animation, typified by *Video Works* on the Macintosh, in which pieces of paintings are manipulated on the screen. While *Animator* does support cell animation, it also supports metamorphic animation, by which shapes can be manipulated in a variety of ways. For instance, they can be rotated in three dimensions and change their shape — squares can turn into cubes, for example. Because the Amiga has certain hardware chips, it allows the user to do things that were previously possible only on $100,000 minicomputers. The "in betweening" feature goes beyond moving an object from point A to point B; it includes changing color, shape, and even speed. A graphics hardware chip, called the "blitter," allows fast manipulation of the bit maps. The "storyboard" feature allows nine different animations on the screen for editing. Objects can be cut from one animation to another, or whole animations can be spliced together. The Timing menu option allows the user to go from tween to tween, fine tune the animation, and alter existing work. You don't even have to use the keyboard during the course of creating an animation.

The Amiga is capable of producing camera ready video with the Genlock option. A digitizing device is currently available which allows images to be captured for use as mattes. And if you need sound with your animation, combine *Animator* with the output of your favorite sound program running concurrently, and you can have the best of both worlds. Compatible with *Aegis Images*, *Deluxe Paint*, and other packages using the IFF (Interchange File Format), *Animator* is a fantastic tool for communicating ideas.

Aegis also has two Computer-Aided Design (CAD) packages, the evolution of which dates from the company's early days. Aegis put a lot of effort into developing its early game software in order to create modules which could be used later in CAD programs. Both the *Aegis Draw* and *Aegis Draw Professional* packages are highly object based. Using pull down menus, easy to understand prompts, online help, and multiple windows and views, *Draw* provides the user with an excellent design environment. Some of *Draw*'s features include automatic scaling, multiple layering in different windows, and selectable gridding. An additional feature is the ability to build a parts library that can be loaded into a drawing. Parts can be recalled and reused. *Draw* can be used to design organizational charts, maps, tables, architectural, mechanical, or even electrical drawings.

*Draw* offers considerable speed — while zooming down on an area, the machine does not spend time looking at objects that aren't in the views. *Draw* allocates only as much memory as it needs on the fly.

*ProDraw* is a professional CAD package comparable to *AutoCAD* on the IBM PC. The Pro system's biggest difference from regular *Draw* is its programmability: user-defined menus, macros, slide shows. *ProDraw* supports screen resolutions of 320 by 200, 640 by 200 and 640 by

**Michelle Mehterian, v.p. of Creative Services, sees Aegis' role with the Amiga as "providing excellent software for excellent hardware."**

—RESUME—

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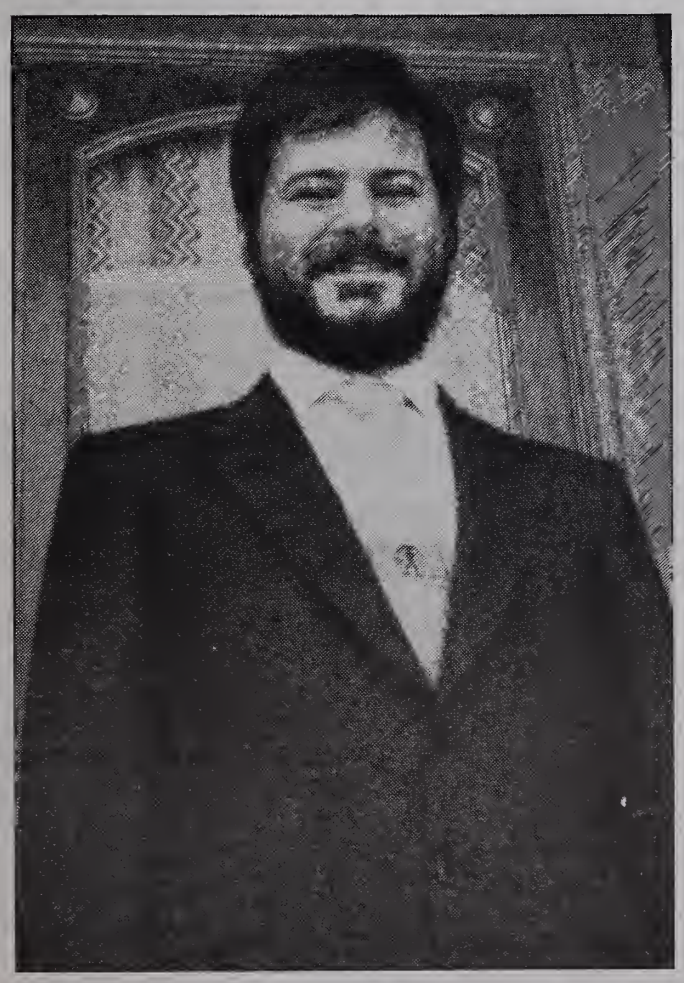

## OBJECTIVES

I have been programming computers for 21 years, maintaining enthusiasm in this field through work with new and innovative parts of technology. Goodall Computer Systems, my most recent manifestation, is a high productivity work environment. Presently I am looking for opportunities that will provide me with challenging new work.

## SKILLS

Structured design, hardware/software synthesis, re-entrant coding, interrupt routines, transportability, strong in procedural/function activating languages such as "C", PL/M, Pascal, or Fortran; fluent in many assembly languages, especially 8086, 80186; knowledge of LSI devices used in software engineering such as interrupt controllers, disk controllers, uarts, etc.

## AREAS OF EXPERTISE

I have worked on staff at the following operating system vendors:

| | |
|---|---|
| Digital Research | ( Concurrent DOS ), |
| OSM | ( Zeus ), |
| Phase One Systems | ( OASIS ), |
| MVT Microcomputers | ( EFAMOS ), |

I have worked on staff at the following word processing vendors:
Lifetree Software (Volkswriter),
IUS (Easywriter),
Select Information Systems (Select86).

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CDOS Work Station Server for 68000 Graphics Engine
CDOS Plasma Screen driver for MAD 80186
CDOS 3.1 RASM XIOS for Gifford
CDOS EM8080 Emulator for Compupro
Graphics and Music demonstration program for Apricot
Ampro SCSI state machine technology

**Digital Research,** Oct 1982 - Sept 1984
Senior Operating System Specialist
The following I/O systems were implemented and on-site support provided around the world:

| | | |
|---|---|---|
| CP/M-86 V1.1 | BIOS for Olympia | "PEOPLE" (USA) |
| CCP/M-86 V2.0 | RASM XIOS for Olympia "PEOPLE" | (USA) |
| CCP/M-86 V2.0 | RASM XIOS for Apricot | (BRITAIN) |
| CCP/M-86 V3.1 | RASM XIOS for Olympia "PEOPLE" | (GERMANY) |
| CCP/M-86 V3.1 | RASM XIOS for MAD 80186 | (JAPAN) |
| CCP/M-86 V3.1 | RASM XIOS for IBM 5550 | (JAPAN) |
| CCP/M-86 V3.1 | RASM XIOS for IBM 5150 | (USA) |

**Lifetree Software**, 1982 - Software Engineer
Contributed to design of **Volkswriter Deluxe**, developed copy protection for Volkswriter.

**Select**, 1981 - Software Engineer
Implemented Select word processor on 8086 on Sirius/Victor 9000

**IUS**, 1981 - Software Engineer
Ported **Easywriter** to IBM-PC for IBM Boca Raton.

**Phase One Systems**, 1980 - 1981
Ported OASIS operating system

**MVT Microcomputers**, 1980
Software Engineer
Operating system kernel support on EFAMOS operating system.

**Oakleaf and Associates**, 1978 - 1980
Programmer/Analyst
Designed and wrote a multitasking operating system for the 8086 processor.

**Western Bancorp**, 1977 - 1978
Communications Programmer
Maintained IBM 3600 series cluster controller configurations, and application code for live teller and atm systems in twelve states.

**Turpin Systems**, 1976 - 1977 Programmer/Analyst
Developed real time load monitoring system for marine product carrier using IMP-16 micro from National.

## EQUIPMENT

| | |
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| Compupro 8/16 Concurrent DOS 4.1 | (multi-user) |
| Ampro LB/186 Concurrent DOS 4.1 | (multi-user) |
| Apricot PC/XI Concurrent DOS 4.1 | (multi-user) |
| Ampro LB/Z80 CP/M-80 2.2 | (single-user) |
| Zilog Z-8000 Development System | (single user) |

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# Volk: "The software industry has to realize that creating software is like creating any other commodity. One has to be able to use it."

400. The package will include a Bill of Materials and, eventually, a solids modeling module.

Aegis is also creating busines packages for the Amiga. *Impact Executive Graphics* is a professional graphic presentation slide show program. It allows the creation of business graphics by entering numbers in the same manner as that used by spreadsheet programs; the program then generates graphs corresponding to that information. There are several ways information can be displayed — in conventional graph, 3-D, or animated form. Users can overlay text and use different type fonts. This product should be available within the next 60 – 90 days.

Aegis' *Word Tools*, developed for the Macintosh, will also be available for the Amiga. A tool for writers developed by author Doug Clapp, *Word Tools* is a punctuation and style-checker which creates a "suspect list" of questionable words or phrases from your document and offers alternatives. *Word Tools* incorporates several accepted styles, including Strunk and White and the Chicago style manual.

According to Volk, Commodore has been very supportive of Aegis' development efforts — he says he gets technical manuals when he needs them and frequently talks to the people responsible for the operating system source code. Having developed products for both Macintosh and Amiga, Volk also finds the Amiga's documentation more helpful than that given to Mac developers. He attributes much of this support to the fact that Aegis is among the first companies to introduce software for the new machine.

According to Barrett, the Amiga is enjoying considerable popularity among professional architects, designers, motion picture companies, and post production facilities. The average freelance graphic designer cannot afford a $30,000 Cubicomp or Aurora system, but he can afford an Amiga with Aegis *Animator*. A few large Hollywood production companies are experimenting with the Amiga for figuring out lighting setups — light, color and speed can be easily manipulated with the Amiga.

Aegis is strongly opposed to copy protecting its software, and none of its products is copy protected. The company's founders feel that the practice penalizes honest people for the actions of those who steal software. Besides which, they point out, the copy protection that some companies have adopted entails high

**According to Aegis president Dave Barrett, Commodore's decision to concentrate on hardware rather than software marketing created a great opportunity for Aegis.**

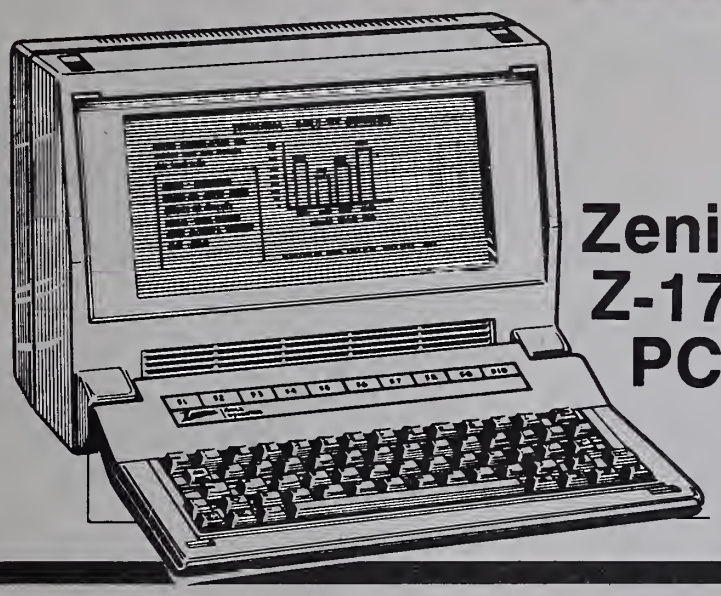
costs and creates a lot of unnecessary trouble for those who want to break that code for legitimate reasons — backup copies, for instance, or transferring programs to hard disks. Piracy, however, is a different matter; Aegis has filed several actions against individuals that they have found distributing their software illegally.

Aegis is also committed to the notion that the software must cooperate with the Amiga's multi-tasking operating system by allowing the user to copy programs to RAM disks and should not completely take over the computer.

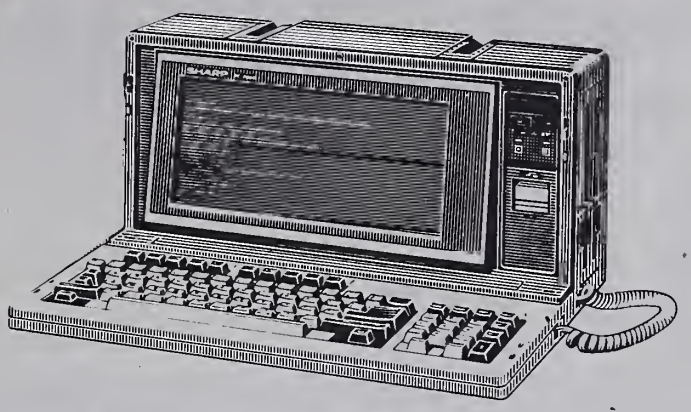
Copy protection, says Volk, interferes with the usefulness of the product. "The software industry has to realize that creating software is like creating any other commodity. One has to be able to use it. Right now many software manufacturers feel that they are providing a service. They don't treat their software like a product. In the video industry, copy protection has all but disappeared. The reason for this is because they got their pricing in line and they got their titles in line."

Aegis' philosophy is that its products must be easy to use and learn, and prices must be reasonable, so that the user can get the most out of it; upgrades must be free of charge; and the software cannot be copy protected. Easily accessible, highly supportive, and market-driven, Aegis has found that these are the ingredients for producing a successful software publishing company. (Aegis Development, Inc., 2210 Wilshire Blvd. #277, Santa Monica, California 90403, (213) 306-0735. □

# Tax Time Specials!



**Zenith Z-171 PC**



**Sharp PC 700 Turbo Charged**

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| **Price** | **$1695*** | **$1595** |
| **Memory** | 640K RAM | 704K RAM |
| **Drive** | 2-5¼" | 2-5¼" |
| **Screen** | Back lit, Luminescent | Similar w/more Adjustments |
| **Math Processor** | NO! | Detachable w/separate number pad |
| **Turbo** | NO! | Switchable |
| **Charged** | 4.77MHz | 4.77MHz/7.34MHz |

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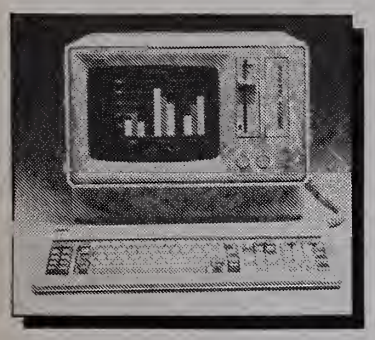
## NCR PC4i™ $1495 MONO $1795 COLOR



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- NCR User Interface to allow you to talk to NCR-DOS operating system at your own level
- RAM Disk for faster look-ups from memory
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- Integrated flex disk controller
- Optional 64KB video memory for up to four addressable pages of graphic displays
- "Works in a drawer" access to PC boards and disk drives

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Memory
  256KB RAM expandable to 640KB on main board
Video Display
  12" monochrome (16 gray shades)
    80 characters per line
    25 lines
    640 x 400 dot addressable resolution
    Anti-reflection screen
  12" color (16 colors)
    80 characters per line
    25 lines
    640 x 400 dot addressable resolution
    Anti-reflection screen
Keyboard
  Detachable, PC/XT compatible
  Ten programmable function keys
  Separate cursor control and text editing keys
  LED indicators on CAPS and NUM locks
  Numeric keypad with second enter key
Disk Drives
  Configured with one flexible disk, two flexible disks or one flexible and one hard disk
Flexible Disk
  5.25" integrated 360KB (48TPI)
Hard Disk
  5.25" integrated 10MB
Expansion Slots
  Eight PC/XT compatible
Communications Interface
  Integrated RS-232C
Printer Interface
  Integrated parallel
Physical Dimensions – Cabinet
  Height: 14.9" 378 mm
  Width: 18.1" 461 mm
  Depth: 14.6" 370 mm
  Weight: 47 lbs 21.3 kg
Physical Dimensions – Keyboard
  Height: 1.75" 44.4 mm
  Width: 20.75" 530 mm
  Depth: 7.9" 200 mm
  Weight: 2.9 lbs 1.3 kg
Power Requirements
  107-257 volts AC 50/60 Hz
Environmental
  10°-32° C (operating temperature)
Relative Humidity
  20-80% (operating range)

### BUNDLED SOFTWARE

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  NCR-DOS
Language
  GW-BASIC
Tutorial set
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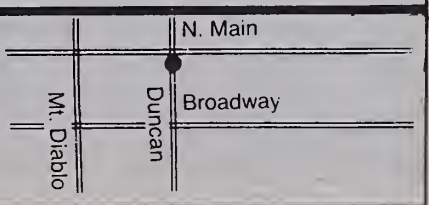


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# Electronic Arts

By Matthew Leeds

PHOTO: PAT JOHNSON STUDIOS

Fun and games at Electronic Arts: (clockwise from left) Bing Gordon, Greg Riker, Joe Ybarra.

It's an unusual ad for a software company. No details on RAM or hardware requirements, no screen shots of how the product looks — in fact, no mention of what the product is or what it does, just a closeup of the "software artist" responsible for creating it, along with a few paragraphs of his thoughts on the future of software development in the entertainment industry. With this unique approach to the people side of software, Electronic Arts captured the imagination and loyalty of the software game marketplace.

It's an unusual company. The emphasis is always on the personal side. Programmers are "software artists," and they deal with "producers," who act as intermediaries with management and often side with the artists in aesthetic as well as financial disagreements. Trip Hawkins, the founder and president of Electronic Arts talks mostly about how to better manage and inspire his co-workers, not about numbers of units shipped or percentage of market share.

## Trip Hawkins: "We want to make software that makes computers worth owning."

Trip Hawkins started his first venture in entertainment as a teenager marketing a board game. When he started college at Harvard, he combined studies in psychology and statistics for a major in games theory. His early taste of business as a boy had convinced him of the need for a better grounding in basics, so he went on to get a master's degree in business administration at Stanford. Shortly thereafter he started at Apple's marketing division.

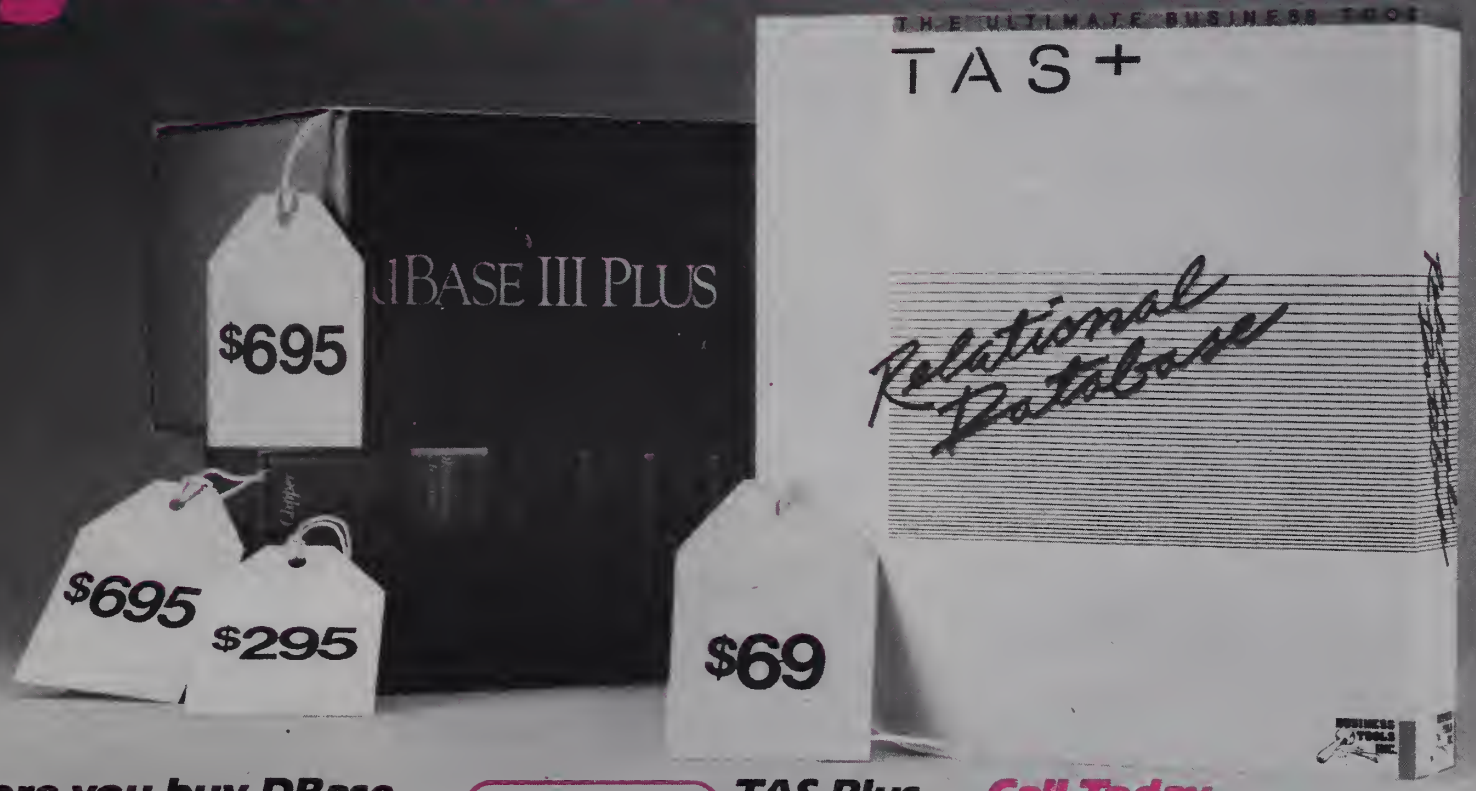
Several years and several projects later, he decided it was time to fulfill his own ambitions, and left Apple to start Electronic Arts. Funded with $5 million in venture capital, some from traditional sources and some from the entertainment industry (and some from Steve Wozniak), Hawkins set out to produce software that was "simple, hot, and deep" — i.e. easy to learn, immediately intriguing and capable of keeping the user's long-range interest.

Hawkins explains, "When I first saw a computer, I became intrigued with its possibilities in education, because it is a hot medium, when coupled with the right software. It promotes interaction and a kind of intimacy that can speed the learning process and deepen involvement, whether for one person or a group. The closer we can come to making the process of learning, playing, and working with the computer lifelike — that is, rich, vivid, varied and dynamic — the more useful computers will be, and the more successful we will become as an industry. We want to make software that makes computers worth owning."

Most of the software produced by EA falls into the category of simulations. Probably the best known is *Pinball Construction Set* by Bill Budge. A great deal of effort goes into making the simulations accurate, which sometimes goes unnoticed, as in *Pinball Construction Set*, where players would only notice if the simulation was *not* accurate. Often, though, as in the case of *Seven Cities of Gold*, the game models the real world so well it draws attention. The "create new continents" feature of *Seven Cities* follows the rules of plate techtonics so precisely that a doctoral thesis has been written about it.

Electronic Arts' interest in the Amiga dates from a period before Commodore owned Amiga. But it is an early internal memo to Hawkins from Greg Riker, Manager of Technology at EA, that offers an inside look at the company's decision to commit to Amiga development. Riker, responsible for the "tools" that programmers use at EA, evaluated the Amiga in October '84 at Hawkins' request. His verdict: great graphics, wonderful sound, should have mini-

# The price of power just went down.

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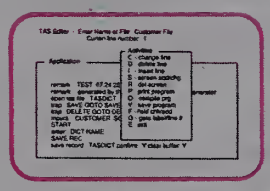

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mum 256K memory with 512K recommended (this was in late '84, when the Amiga only had 128K onboard), kludgy disk operating system, but an overall tremendous potential for the kind of software that EA produces.

Just after this, Hawkins began to hound Amiga/Los Gatos for hardware to begin developing on. The first Amigas came in black boxes and had hand-tooled wooden keyboards. The first machine received at EA was serial #12. In just a few days the first demos were up and working, thanks to the Artist's Workstations used by EA.

The Workstations were Greg Riker's creation. Riker developed a fascination with electronic gadgets as a recording engineer. As home computers became available, he started looking for a way to learn more about them. When Atari moved away from cartridge based games and into home computers, they started marketing software on cassettes. Quality control problems soon led to their looking for a person with a recording engineer's background — who turned out to be Riker. He quickly taught himself BASIC and assembly languages, and as Atari moved away from cassette based software, he moved into programming. He worked as a troubleshooter, sort of a hardware/software guerrilla, dropped into a problem and told to solve his way out of it.

Shortly after EA was formed, a friend of Riker's who worked there tried to persuade him to take a position with the new company. This was prior to the problems at Atari, and it looked like a chancy move at best. However, Riker happened to see the ad described at the beginning of this article and immediately wondered if this was the same company his friend worked for. The next day he tendered his resignation at Atari.

One of the major software development problems Riker had to address is that if the software you are writing "crashes," so does the development environment you were creating it in. Crashes usually leave the computer locked up. He wanted to create a remote workstation that would let programmers develop code outside of the target machine and then download it, run it and examine the results. Additionally, by standardizing on a single development environment, ports to other target machines would be made easier.

The result was the Artist's Workstation, which also included software tools to assist the development process. One tool, known internally as "Prism," eventually became *Deluxe Paint*.

By starting development on several program ideas on the Workstation, EA was well into the development process by the time their first Amigas arrived. The early Amigas had their operating system on EPROMs, programmable chips. New chip sets arrived every few weeks as the operating system evolved, and bugs were swatted. By mid-year the hardware was "locked," and the new operating systems arrived on disk.

Several products at EA were "fin-

## EA's Products For The Amiga

**Deluxe Paint:** The first powerful paint program for the Amiga. It has a great user interface, and offers feaures never seen before on systems available for under $10,000. *DPaint* uses 32 colors on-screen, selected from a palette of 4096, 22 levels of zoom, color cycling, brush bends, shears, scaling, and rotates. EA will be releasing several graphic library disks for this program, as well as an upgrade around June/July.

**Dr. J And Larry Bird Go One-On-One:** The first basketball simulation with digitized sounds. You can play against the computer as either player, or play with a friend. There are four levels of play available. Each player has his own characteristics modeled after those of his real-life namesake. Several real-life factors are also included: fouls, fatigue, and hot streaks. Try not to break the backboard.

**Seven Cities Of Gold:** The age of discovery, exploration, and conquest. Set sail from Spain for the New World. Explore new lands and peoples. There are many factors to keep track of as you outfit your expedition, voyage across the seas to new continents, and make contact with the natives. Trade or Conquest? Establishing forts and missions can drain your resources. The weather in a new land can be treacherous.

For the more adventurous, the game also lets you create new worlds to explore.

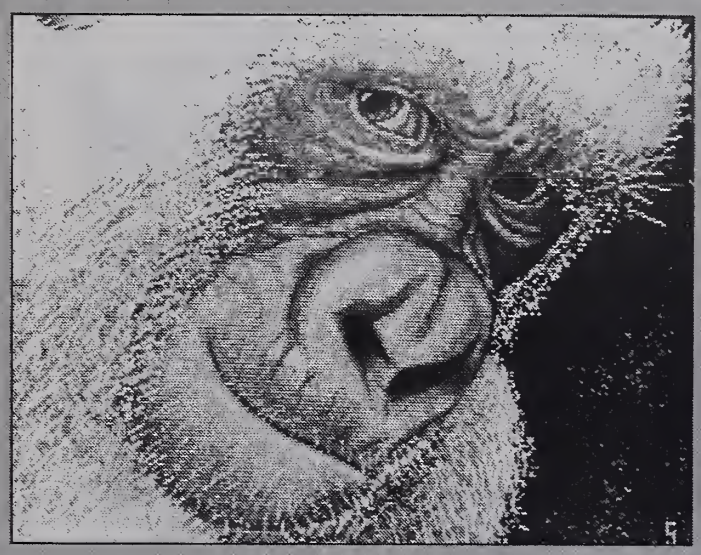
**Archon:** A depiction of the eternal struggle between Light and Darkness. The scene is set as a contest of action and strategy between opposing forces from myth and legend. There are two screens used in play: the strategy screen, where you and your opponent take turns maneuvering your icons (creatures) for favorable position, and the combat screen where icons fight it out. Sort of an animated chess.

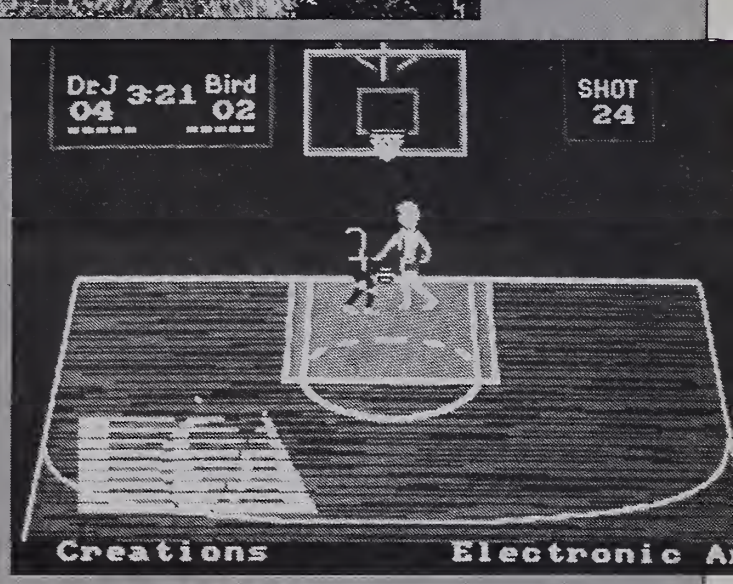
**Golden Oldies Volume I:** This is an historical retrospective of the development of entertainment software. Four programs are included: *Adventure, Eliza, Life,* and *Pong.* There is also an excellent history of each program, and some historical perspective as well.

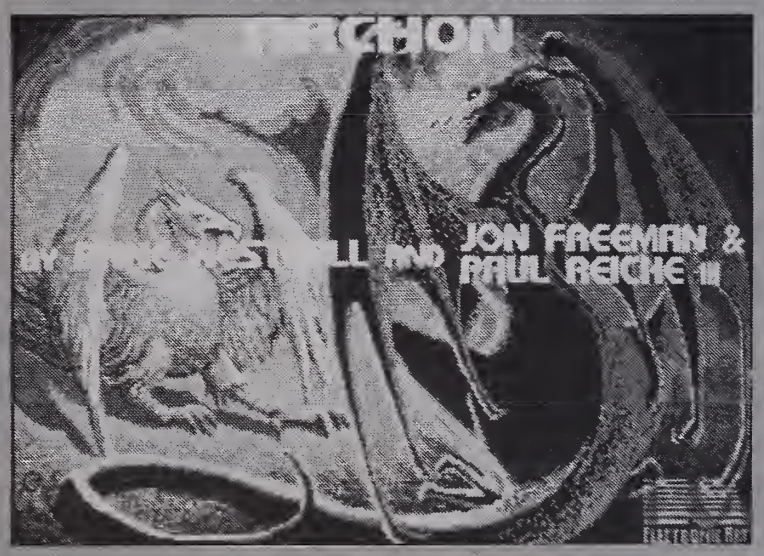
**Financial Cookbook:** One of my favorites, this is a series of answers to commonly asked financial questions. Using templates (formulas) you input the data for your situation, and get back answers. Mortgages, interest rates, refinancing, marginal tax rates, life insurance — it's all there. You probably could figure all this out without a computer, but it's much easier this way.

**Skyfox:** A combat flight simulator. You are the pilot of an advanced Skyfox Mach 4 Federation fighter plane, doing battle against the enemy, whose motherships are attacking Federation asteroid bases with aircraft and tanks. *Skyfox* has full stereo sound and high resolution graphics. High tech features include shields, scanners, radar, autopilot, and afterburners. The game plays fast.

**Articfox:** A strategic combat tank simulation similar to *Skyfox.* You are the pilot of the Articfox, an advanced tank of the future. Your mission is to save the Earth from a variety of highly intelligent alien forces. You must guide Articfox through a realistic 3D arctic world while fighting the enemy. Strategy as well as arcade skills are needed to stay alive while navigating the ridges, crevices and ice fields of your battleground.






EA's Amiga software lets you create detailed pictures, perfect your basketball skills, or slug it out with the forces of darkness—all in the Amiga's dazzling graphics environment.

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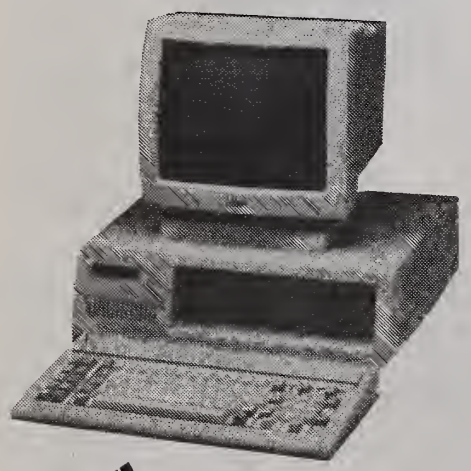

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**Trip Hawkins: "The closer we can come to making the process of learning, playing, and working with the computer lifelike — that is, rich, vivid, varied and dynamic — the more useful computers will be, and the more successful we will become as an industry."**

ished" by September, and were only waiting for a stable OS. Electronic Arts made a difficult decision not to release the software until version 1.1 of the operating system was released, believing that it would be safer to wait until the less stable version 1.0 has been fixed than to risk complaints from end-users about "buggy" software. By the time the first five Amiga software titles shipped in late December '85, EA had invested over 10 man-years in development. In the first *two* weeks of shipment, they recouped their entire investment.

One element that keeps EA producing great software is the quality of programmers that choose to work there. Finding that talent and keeping it is the responsibility of producers. Joe Ybarra, a co-founder of EA, is a producer who's been responsible for *Mule*, *One On One*, *Seven Cities Of Gold*, *Adept*, *Heart Of Africa*, *Arctic Fox*, and *The Bard's Tale*. He explains, "A producer is the interface between the artist and the company. He acts as a talent scout, artist's spokesman, negotiator. Producers have a financial responsibility to both parties, and always try to create a win/win situation. We act as a focal point for communication between product development, marketing, and sales. We measure the risks of creating new kinds of software and using new kinds of technology. Producers bring together programmers, graphic artists, designers, writers, whatever talents are needed to create a finished product.

"I could be making more money working somewhere else, but I love games, and I believe that games are the vehicle through which the breakthroughs in artificial intelligence will occur."

Communication is a key to making this kind of collaborative effort succeed. EA has installed a 3-COM Ethernet system for use as an electronic mail network. It provides a link for producers, programmers, and support staff. Many of the programmers work at home, and connect to the system using the Workstation and a modem. There is also a large database of software routines available on-line: animation, sounds, IFF drivers, and daily reports on bugs and fixes.

**Electronic Arts founder Trip Hawkins, who created a different approach to marketing software.**

Another key to the prosperity of Electronic Arts is innovative marketing. Bing Gordon, VP of Marketing, says, "Most people think that we spend a lot of money on our packaging. We pioneered the record album style package for software, and it not only looks better than most of the other packages on the market, but it costs much less to produce. It also takes up less space in shipping, and looks better in the retail environment.

"We're also co-sponsoring a contest with Commodore for the best *Deluxe Paint* screens, with a great variety of prizes. We're looking at allowing our C64 customers to upgrade their software to the Amiga at some lower cost. We're strongly behind the Amiga, and are looking to do whatever we can to increase sales of the machine."

Electronic Arts is looking towards the future, closely following developments in CD-ROM's, and MIDI products for the Amiga. They are expanding their development of productivity software for the Amiga (the *Deluxe* line) and are taking a long look at marketing hardware peripherals as well. They work closely with manufacturers of existing hardware to insure compatibility with EA's software. A simple measure of their success is the nearly eighty "best program" awards they have received since 1983. □

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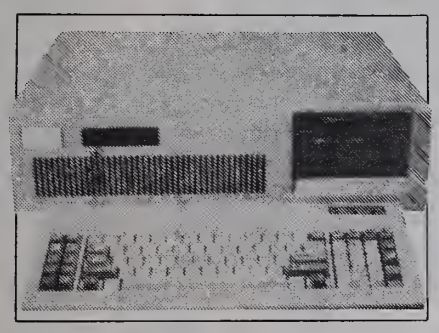

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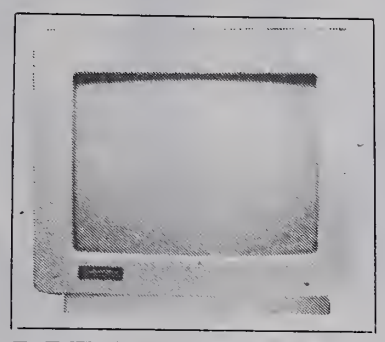

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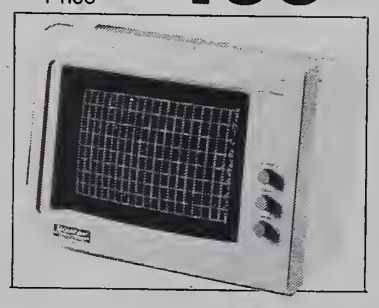

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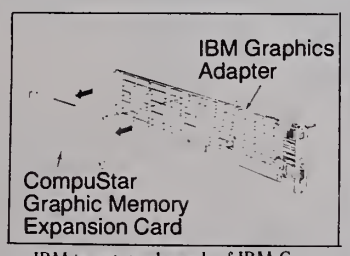


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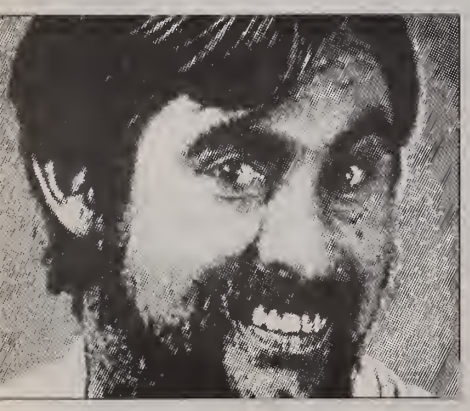
A Squared Systems, comprised of (l-r) Wendy Peterson, Arthur Abraham, and George Ellis, created LIVE!, a versatile and low-cost video digitizer for the Amiga.

PHOTOS: MATTHEW LEEDS

# LIVE!

## *Real Time Video On The Amiga*

**By Matthew Leeds**



LIVE! allows the user to capture and manipulate video images in real time, in color or black and white.

One of the great things about the Amiga is its open architecture. There is free access to the 68000 main bus through an expansion port on the right side of the computer. All sorts of exotic devices will end up attached to that port, some esoteric and some very down-to-earth. One of the most interesting is Amiga LIVE!, a video digitizer (sometimes called a frame grabber) that runs in real time. LIVE! is the creation of A Squared Systems, a small Oakland-based company.

A Squared retains much of the garage operation ethos: keep expenses to a reasonable minimum, don't get caught up in the hype of being high-tech, and remember that doing business is still just people talking to each other.

It's a small company, only three people. Wendy Peterson takes care of business. She manages the calls and letters that come in each day, keeps track of obligations and commitments, and generally tries to maintain the balance required when a small business starts to be successful and grow into a medium-sized business. (She also is going to law school on the side, an idea other small businesses might take a look at.)

Arthur Abraham is the resident software expert. He has worked on a variety of pre-Amiga projects, including King's *Quest* for Sierra On-Line and *Movie Maker* for IPS. He met Wendy Peterson at Sierra On-Line, and they decided to start their own production company. The Bay Area looked like the best place to be, so they settled in Oakland.

While living in Oakland they met George Ellis, who deals with the hardware end of the company and combines technological expertise with creativity. He has degrees in physics and art, and has worked with laser graphics, special effects video equipment, video paint systems, and gen-lock systems.

In late '84 they began to hear about the Amiga, and met R.J. Mical, Director of Intuition at Commodore/Amiga, while seeking funding to produce a unique game/simulation. A few months later Ellis attended the Hackers' Conference and saw a video digitizer for the Mac (MacVision) in operation. Since it was a hacker's group, the top had already been popped on the Mac's box, and he was surprised by how few components the device required. It seemed to him that he could build a similar device for the Amiga, and that it would perform much better given the Amiga's hardware capabilities. Such was the genesis of LIVE!

After that, there was a lot of hard work: convincing Commodore that the project was possible, keeping the wolf away from the door during development, and dealing with the hundreds of people who wanted information, and still do, about a product that's not due for release until July.

Technically speaking, the digitizer turns a video signal into a bit map that the computer can recognize. A video signal is an analog creature, that is to say, it is composed of a continuous, unbroken wave of information, rising and falling but never stopping. Computers live in a digital world, with everything in discrete steps, bit by bit, on or off. A device inside of every computer converts the computer's world of on and off bits into the video world of analog signals. This device is called a digital-to-analog converter, and it is used to produce the video signal that drives your monitor.

A digitizer does exactly the opposite. It takes a video signal and breaks it into bits. Visualize a wave signal, undulating up and down. Now superimpose on it a straight line. Whenever the wave is above the line, that's an on bit, and whenever it is below the line that's an off bit. This is a very simple analog-to-digital device. This type of sampling will give you a black and white picture, with no values in between.

To get a grey scale, or color, you need more steps. LIVE! enables the Amiga to display 16 levels of grey, or 32 colors from a video signal. The conversion of the video image to a bit map happens in real time. You can watch the screen, just like television, and see a moving image.

LIVE! has many uses. The ability to digitize and store images could be used to create a visual database, mixing pictures and text. Parts catalogs, personnel records, medical files, training materials, and home MTV-type videos are but a few of the applications that come to mind.

LIVE! will sell for under $300, and will be featured in the Amiga Pavilion at EXPO 86 in Vancouver. For more information contact Commodore Business Machines, or A-Squared Systems, 10 Skyway Lane, Oakland, CA 94619. □

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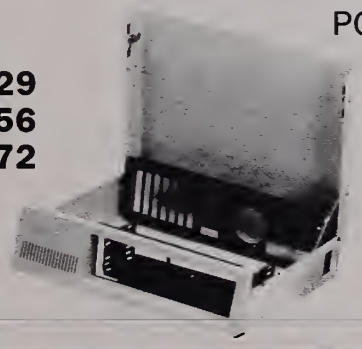

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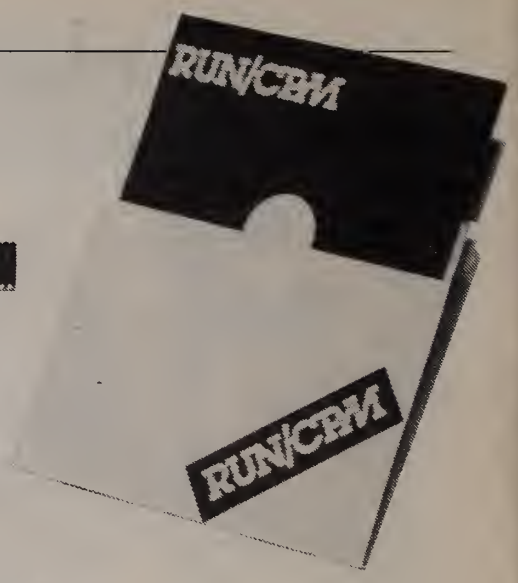
V20/30




**By Robert D. Athey Jr. and Nancy Mulvany** © 1986

All too often, a much-hyped "revolutionary new product" proves to be nothing of the kind, but rather a rehash of all-too-familiar products. RUN/CPM (version 4.01) from Micro Interfaces, however, is a genuinely new and very useful offering which allows CP/M programs to run on MS-DOS machines.

This ability can be a real godsend to longtime CP/M users who, for one reason or another, have moved on to the MS-DOS environment but don't want to replace their entire software library, or who need a particular application that only exists in CP/M.

RUN/CPM's software revolves around the NEC V20/V30 chips, which are replacements for the CPU chips in IBM or compatible machines. The V20 replaces the Intel 8088, and the V30 replaces the Intel 8086.

Many people replace their Intel chips with the NEC chips to improve the performance of the IBM compatible machines. We're not going to discuss this particular aspect of the NEC chip in this article. Instead, we'll examine a not-so-highly-touted feature of the chip: its ability to run 8080-coded programs on the 16-bit computers.

Once the NEC V20/V30 chips were introduced, the race was on to develop the software to bring CP/M capability to the IBM PC and its clones. Micro Interfaces was one of the first to make its product available to the public; RUN/CPM 3.0, introduced late last fall, has been quickly followed by version 4.0, and version 5.0 is due shortly.

## INSTALLATION

The package comes with an NEC chip, a 22-page plastic bound documentation booklet, and a disk. The first hurdle is to replace the Intel 8086 chip with the NEC V30 chip. (Since we reviewed this product on an AT&T 6300, which uses the 8086 chip, all our references are to the NEC V30 chip. However, these references should also apply to the NEC V20 chip as well.) The booklet's instructions are quite explicit on how to perform the installation with common household tools. You are told what to look for after you've exposed the innards of your machine, and how to perform the operation safely—protecting yourself from electrical shock hazards, and protecting the chips from static discharge damage.

The installation procedure proves quite easy—essentially a plug-in operation, with no need for the soldering. Even the non-handyman should have no problems.

After the V30 chip is installed in your system, Micro Interfaces recommends a quick system check, such as your normal system power up checks. As an alternative, you might just run a normal 16-bit program to see if it behaves normally—a good time to run a quick game that you know well!

Once you've installed the chip, the next operation is to install the RUN/CPM software. Again, the instructions are clear and concise, and the software installation is simple. Details are provided for both floppy disk machines and those with hard disks.

RUN/CPM is menu-driven. The first menu you will see offers the following selections:

1. Enter CPM Mode
2. Configure CPM System / Select Terminal Emulation
3. Select CPM Disk Emulation
4. Format CPM Disk

Option 2, "Configure CPM System," is an extremely powerful module of the program. It is here that you set up a configuration for the CP/M programs you will run. The following is a portion of the configuration menu:

1. CP/M Terminal Emulation
2. PC Type
3. Video Mode
4. Logical Drive Assignments
5. I/O Re-Direction

## TERMINAL EMULATION

Many CP/M programs are configured for a particular type of terminal. For example, if you are planning to run "pre-graphics" Kaypro software, as we did for this review, you will select the "Kaypro 2/4 (1983)" terminal. Figure 1 is a display of the CP/M terminal emulation selections for version 4.01 of RUN/CPM.

**Figure 1**

**CP/M TERMINAL EMULATION SUBMENU**

Current Emulation: Kaypro 2.4 (1983)

| Move to your desired Terminal by using the UP/DOWN/TAB keys | | THEN indicate choise by: pressing the SPACE BAR |
|---|---|---|
| ANSI Mode | Lear Siegler ADM 5 | |
| Adds Regent 40/60 | Lear Siegler ADM 11 | Televideo 910+ |
| Adds Viewpoint | Lear Siegler ADM 12 | Televideo 914 |
| Beehive Topper (DM 78) | Lear Siegler ADM 24E | Televideo 924 |
| Cromemco C-10 | NEC PC-8001A | Televideo 925 |
| Dec VT52, VT55 | Osborne | Televideo 950 |
| Hazeltine 1510 | Qume Out-102 | Visual 50/55 (Esprit) |
| Hazeltine Esprit | Qume Out-108 | Visual 50/55 (VT52) |
| Heath H19 | Radio Shack DT-1 | Visual 210 |
| Honeywell VIP 7301 | Sanyo CRX 1100 | Wyse Tech WY-100 |
| IBM 3101 | Sony SMC 70 | Wyse Tech WY-300 |
| Kaypro 2,4 (1983) | Soroc Challenger | Zenith XT-10 |
| Kaypro 2,4,10,Robie (1984) | Soroc IQ120 | Zorba |
| Lear Siegler ADM 3A | Televideo 910 | |

To Return to Main Menu: Press the RETURN Key

Use the "PC Type" option to select the type of PC you're using. "Video Mode" allows you to choose monochrome, color and graphics video.

## LOGICAL DRIVE ASSIGNMENTS

This option is used to select particular assignments for drives A: through O: In our testing on the AT&T, RUN/CPM was placed in its own subdirectory on the hard disk. The CP/M programs we worked with could not use DOS path names, so if we wanted to edit a file in a sub-directory, using the CP/M version of *Perfect Writer*, we could set drive B: equal to C:\subdirectory\sub-subdirectory. Drive A: was set equal to C:\CPM (the subdirectory in which RUN/CPM resides). We found the ability to set up logical drives wonderful!

The "Set Colors By Row" option allows you to configure your color monitor. The "I/O Re-Direction" option allows re-direction of input and output to and from various devices and ports. This can be helpful if you're exchanging data between two computers.

All of the above options selected from the configuration menu can be saved for future use. Now, let's return to the main menu in RUN/CPM.

## DISK EMULATION

The "Select CPM Disk Emulation" option allows you to set your disk drives so that particular CP/M disk formats can be read and written to. Figure 2 is a listing of the formats supported in version 4.01. For our testing, we switched between the two Kaypro formats. The review machine, the AT&T 6300, has two floppy drives (drives A: and B:) in addition to the hard disk (drive C:). After selecting the proper Kaypro disk format drives D: and E: become Kaypro drives.

You might well ask, "So where are drives D: and E:?" Well, they are really floppy drives A: and B:! If we put a Kaypro disk in drive A: and type: DIR D:, we get a directory of the Kaypro disk. At the same time, the "real" drive A: is still accessible as a "normal" DOS drive.

## DISK FORMATTING

Lastly, RUN/CPM allows for the formatting of CP/M disks. The formats available in version 4.01 are the same as those listed in Figure 2. Micro Interfaces is constantly in the process of expanding the list of available formats.

---

*We would like to maintain a listing of how various CP/M programs perform with the NEC chips. Nancy Mulvany can be reached via the KAY*FOG RBBS; on the WELL (ncm), and through The Source (CPA 155). U.S. mail can be sent c/o MicroTimes, 5951 Canning St., Oakland, CA 94609.*

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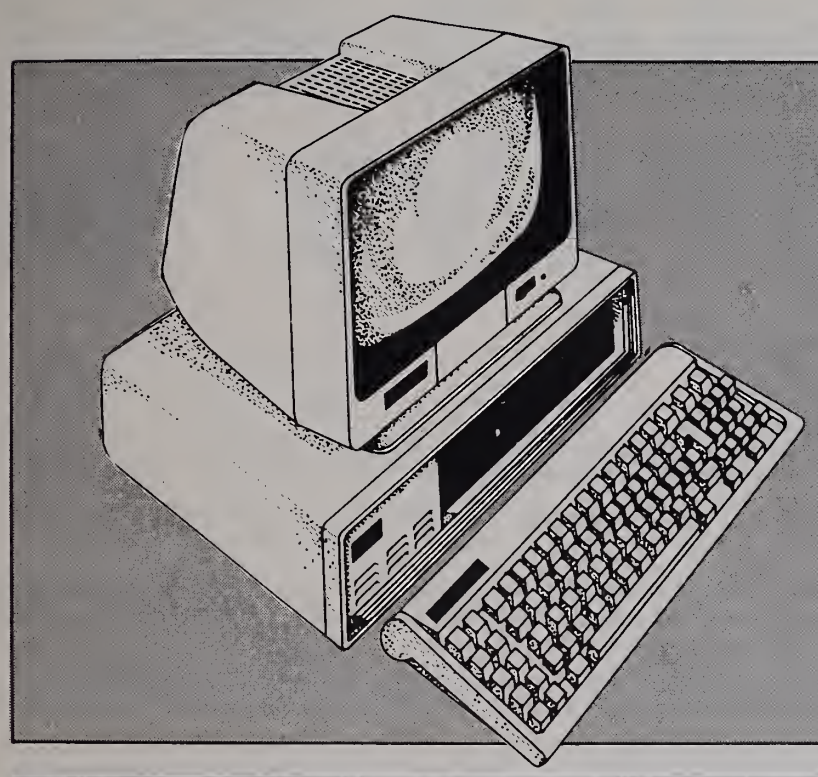

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## READY TO RUN CP/M

After you've made all the appropriate selections from the above menus, it's a simple matter to switch to the CP/M mode. You select option 1, "Enter CPM Mode," from the main menu. That's it! You know you're in the CP/M mode because your drive prompt on the screen is in inverse video—a very handy feature.

If you want to run CP/M programs on the hard disk, they must be renamed from .COM files to files with .CPM extension. Running CP/M programs off floppies does not require this renaming.

## RUNNING DOS PROGRAMS

An extremely nice feature of this software is that even when you're in the CP/M mode, you are not isolated from DOS. With many programs of this type, you find yourself in an "either/or" situation—the programs do not allow quick switching back and forth between CP/M and DOS. RUN/CPM, on the other hand, allows you to switch back and forth from DOS to CP/M with ease.

## THE TESTS

Table 1 lists the results for several programs that we tested—all CP/M programs that run on Kaypro II and IV computers. Notice that the two timing tests we did were done on the AT&T: one using two floppies and the other using the hard disk only. Also notice that three sets of tests were run for the Kaypro times: 1) a Kaypro running at 2.5 Mhz—the standard clock speed for old Kaypro IIs; 2) a Kaypro running at 5 Mhz—a typical Kaypro speedup; and 3) a Kaypro running at 5 Mhz with the programs and data files residing in a MicroSphere 1 Mb RAM disk—the almost-ultimate Kaypro!

Our trials showed that the Kaypro CP/M programs do indeed run well on the AT&T. However, in a sense it's virtually meaningless to try to absolutely quantify speed in any program comparison from device to device, and from operating system to operating system. Since the microprocessor chips are essentially a "hard-wired" set of paths for electrons to race around, and since the design varies from chip to chip, these paths will vary in length for every instruction. It turns out that some instructions are very fast on one machine, while others are not; variations from device to device are considerable.

We admit our lack of purism in this regard. We are approaching these tests from the perspective of a "typical" user. To us, the main question is, does the program run? Then, how quickly? After all, faster operation is not itself the main issue—we find the *real* time eater is keyboard input, even if your are a fast and excellent typist!

Given these caveats, however, we *do* care about the speedy operation of programs. Our choices of program speed tests were:

1. A 47K word processing file with *Perfect Writer* (version 1.20)—a loading/reading/swapping operation;
2. A 10K spreadsheet for *Perfect Calc* (version 1.10)—a loading/reading/swapping operation;
3. A 340 file for *dBase II* (version 2.4)—a simple count of records; and
4. A "PPONG" game having a "timer" built in as part of the scoring—a combination load/count.

Note several items in Table 1. First and foremost, the programs listed run as CP/M programs on a DOS machine! As far as speed is concerned, the most ideal operating environment for most of the programs was the Kaypro running at 5Mhz with the MicroSphere RAM disk. Also, in most cases the AT&T running the CP/M programs off floppies was the slowest.

The bottom line is whether or not the CP/M programs run. The programs we could not get to run were public domain directory programs and a version of *WordStar* (3.31) configured for the Kaypro. We suspect that the presence of Z-80 code in that version of *WordStar* is the culprit. Remember, the NEC V20/V30 chips can run 8080 code, not Z-80 code! It has been rumored that NEC is planning to release a chip that will include the ability to run Z-80 code.

There were some glitches, particularly with regard to graphics. One glitch we noticed was that the PPONG game did not show the target, nor would the GUSHER game load at all. When we asked about this, Dan Robey of Micro Interfaces indicated that the graphics character set is not included in the RUN/CPM package. However, Micro Interfaces will make an installable graphics character set available.

In some cases, we found that the speed increase wasn't entirely desirable—some games become absolutely unplayable, at least for those without the eyes and hand-eye coordination of 17-year-olds.

One last glitch that we found involved an attempt to run *Perfect Writer* off of disk drive D:, reading a file on disk drive E:. We could not get *Perfect Writer* to format that file! We got DOS read errors whenever *Perfect Writer* attempted to read drive E:. Since other programs were able to read drive E:, we suspect that the problem lies with *Perfect Writer*, rather than with RUN/CPM.

All in all, RUN/CPM is sure to make CP/M owners happy if they make the transition to DOS machines. Many of their CP/M programs will run and therefore not need to be replaced with DOS versions right away.

For users who do not already have CP/M programs, this package makes a library of tens of thousands of programs available. Many of these programs are tried and true, and many CP/M programs are very application specific. For example, the directory released some time ago by Kaypro Corporation, which listed programs only for Kaypro CP/M machines, was over an inch thick! The CP/M programs may lack the fancy menus, sound effects and general pizazz of DOS programs, but there is power lurking within them.

Micro Interfaces is working on a new version of RUN/CPM, RUN/CPM Plus, which would allow CP/M programs to access up to 1 Mb of memory. Whatever your reasons for running RUN/CPM, you will be a winner. It's an excellent program, backed by a knowledgeable company. (RUN/CPM [with NEC V20 or V30 chip], $99, Micro Interfaces Corporation, 6824 NW 169th St., Miami, FL 33015.) □

***NOTE:*** *As we go to press, we have received version 5.1 of RUN/CPM. The new version contains several new features. In particular, it is now easy to set up RUN/CPM to execute CP/M programs in a RAM disk. This is only one of many new features; next month we will summarize the new additions to version 5.1.*

**Table 1**

**RUN CPM—PROGRAM EXECUTION TIMES**

| | AT&T 6300, with 20Mb Hard Disk; 8 Mhz operating speed | | KAYPRO Computer CP/M operating system | | |
|---|---|---|---|---|---|
| | | | RAM disk | | |
| | 2 Floppies | Hard Disk | 5 Mhz | 5 Mhz | 2.5 Mhz |
| Perfect Calc | | | | | |
| load 10K file | 23 | 19 | 27 | 37 | 74 |
| recalculate | 3.88 | 4.04 | 5.03 | 5.03 | 10.6 |
| Perfect Writer | | | | | |
| load 47K file | 102 | 18 | 17 | 48 | 77 |
| format file | * | 131 | 87 | 126 | 263 |
| dBase II 340K database, 966 records | | | | | |
| COUNT ALL | 131 | 28 | 19 | 63 | 78 |
| Pong | 70 | 56 | 100 | 100 | 107 |

*After repeated attempts, we were unable to get this file formatted.

ALL TIMES ARE IN SECONDS

**Figure 2**

**CP/M DISK EMULATION SUBMENU**

Move to your desired Disk format by using the UP/DOWN/TAB keys

Enter N (next) P (previous) to display another page

| | |
|---|---|
| CP/M-86 for the IBM PC -SSDD- | NEC PC-8001 (SSDD) |
| CP/M-86 for the IBM PC (DSDD) | NEC PC-8001 (DSDD) |
| Access Matrix (SSDD) | Osborne 2 & Executive (SSDD) |
| Access Matrix (DSDD) | Osborne 4 (DSDD) |
| Ampro (DSDD) | Otrona (DSDD) |
| DEC VT-180 (SSDD) | TI Professional (SSDD) |
| Epson QX-10 (DSDD) | TI Professional (DSDD) |
| Heath/Zenith Z-100 (SSDD) | TRS-80 FEC (SSDD) |
| Heath/Zenith Z-100 (DSDD) | TRS-80 FEC T805 (SSDD) |
| Heath/Zenith Z-90 1K blk (SSDD) | TRS-80 III Hurr. Labs (SSDD) |
| Heath/Zenith Z-90 2K blk (SSDD) | TRS-80 III Mem. Merch. (SSDD) |
| Kaypro II/2 (SSDD) | TRS-80 IV CP/M+ 512 byte sectors |
| Kaypro 2X,4,10 (DSDD) | TRS-80 IV CP/M+ 256 byte sectors |
| Morrow MD1 & MD2 (SSDD) | Xerox 820-II (SSDD) |
| Morrow MD3 & MD5 (DSDD) | Xerox 820-II (DSDD) |
| Morrow MD11, MD16 & MD34 (DSDD) | Zorba (DSDD) |
| NCR Decision Mate 5 (DSDD) | |

Press the RETURN Key after your selection is made

## Bottom Line

**Programs that ran:**

- *Checks & Balances* (ver. 3.6a)
- *dBase II* (ver. 2.4)
- *Ensoft2*
- *Ladders*
- *MBASIC* (ver. 5.21)
- *NewSweep* (ver. 207)
- *OBASIC* (ver. 4.51)
- *Perfect Calc* (ver. 1.10)
- *Perfect Writer* (ver. 1.20)
- *Pong*
- *NewWord* (ver. 2.16)
- *Unsoft*
- *The Word+* (ver. 1.22)
- *Word Count* (ver. 1.1)

**Programs that did not run:**

- *ElectraFind*
- *Free Filer*
- several sorted directory programs
- *Turbo Pascal*
- *VDO* (ver. 25)
- *WordStar* (ver. 3.31, configured for the Kaypro)

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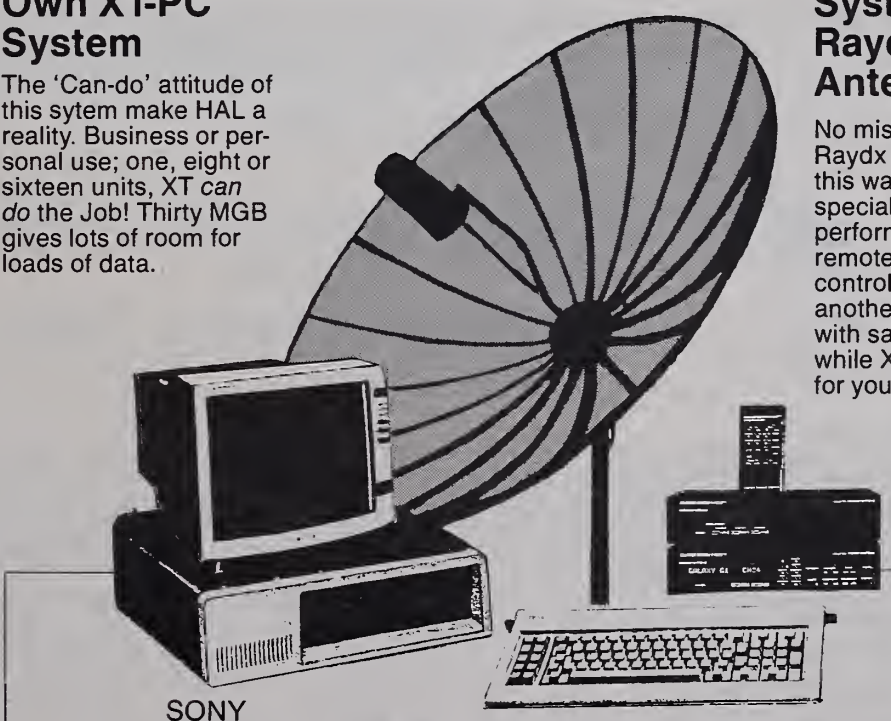

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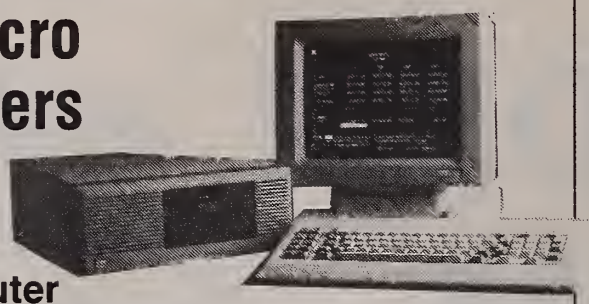

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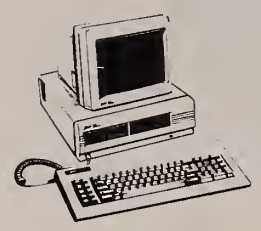

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**"Hackers—Wizards Of The Electronic Age," will air on PBS stations nationwide during the week of April 21.**

# Hackers Video Goes National

If you've ever wondered about the people behind those computers you now take for granted, don't miss *Hackers*, a half-hour video documentary slated for nationwide broadcast on PBS stations during the week of April 21.

Loosely based on Steven Levy's book of the same name, *Hackers* mixes footage from the 1984 Hackers Conference with historic film. Along the way, various pivotal figures in the world of computers speak out on the history and philosophy of the hacker community.

Running through the documentary is the theme of the Hacker Ethic ("Ethic?" comments an anonymous enthusiast at one point. "It's more of an instinct, like baby ducks following their mother..."), the fanatical imperative that led to round-the-clock quests, nocturnal break-ins to computer labs, garage tinkering — and ultimately, the personal computer.

Interspersed through the narrative are many interviews with key figures, nearly every conversation a gem: Steve Wozniak earnestly explaining why, in the face of scorn and ridicule, he felt compelled to build the Apple computer; erstwhile phone phreak John (Cap'n Crunch) Draper and ex-cracker Richard Cheshire (Catalyst) recounting their adventures; Andy Hertzfeld waxing gleeful over the "hack" he's put together for the weekend (subsequently known as Switcher); Bill Budge on the detrimental effect of computer ownership on graduate studies...

Like Levy's book, the program traces the multi-generation evolution of hackerdom, from the MIT/Harvard labs to Stanford, Xerox PARC and the Homebrew Club, into the age of get-rich-quick hardware and software development; it then examines the somewhat unexpected practical and moral issues the erstwhile hackers are now encountering. Doug Carlston of Broderbund Software recounts how, in the days of nocturnal raids on labs, free access to other people's code and knowledge was vital to advances in the field; now, however, software is a commercial product, and those who try to beat protection schemes are usually doing so for financial gain or to avoid paying for the product themselves. Robert Woodhead, author of *Wizardry*, and Richard Stallman, dubbed the "last hacker" of MIT, hotly debate the free-access - to - source - code issue, Woodhead maintaining that tampering with his game is like tampering with his soul, Stallman insisting that restricting access to information stunts the growth of knowledge and discovery. The late Andrew Fluegelman, creator of Freeware, explains the highly practical considerations behind his novel marketing scheme, and grins "I would guess that about one-tenth of the people who are using the program now have paid for it, and there are a lot of commercial software companies that can't make that claim."

*Hackers* will run on April 22 at 10 pm on San Francisco's KQED and LA's KCET; broadcasts are also scheduled for PBS stations in San Diego, Sacramento, San Bernardino, Fresno and Eureka. For information on broadcasts in your area, inside or outside California, call (415) 751-8808. *Hackers* was produced by San Francisco's Fabrice Florin in conjunction with KQED. Nationwide broadcast was underwritten by Hercules Computer Technology, *PC World* and *Macworld*, Apple Computer, Steve Wozniak, and Xor Corporation. The documentary is also available as a home video for $49.95; contact FABCO, P.O. Box 410125, San Francisco, CA 94141, for information.

*— Mary Eisenhart*

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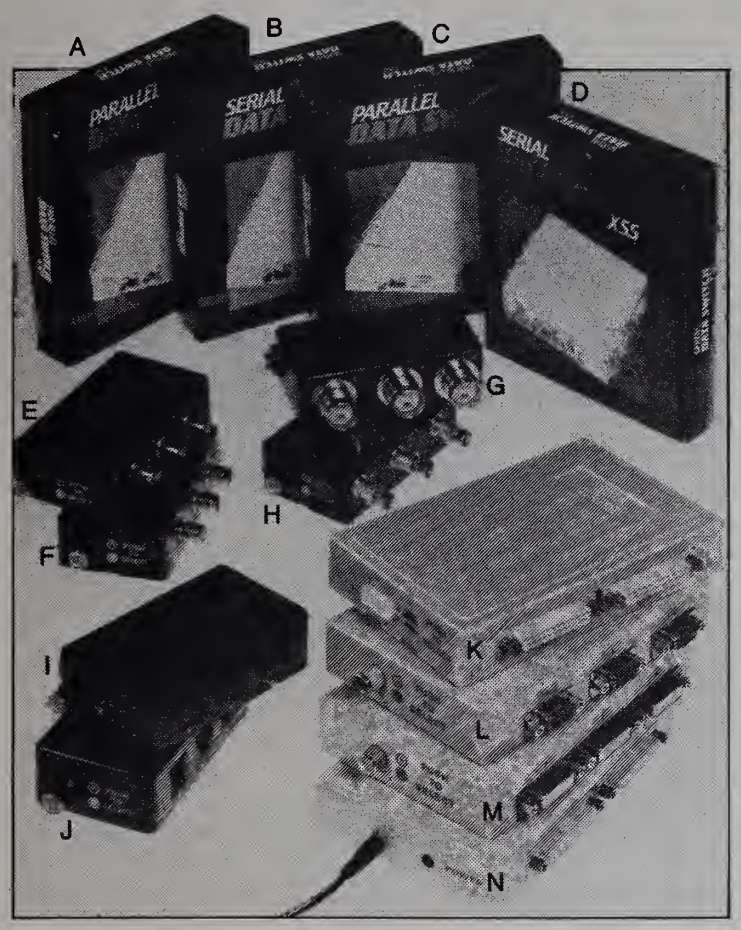


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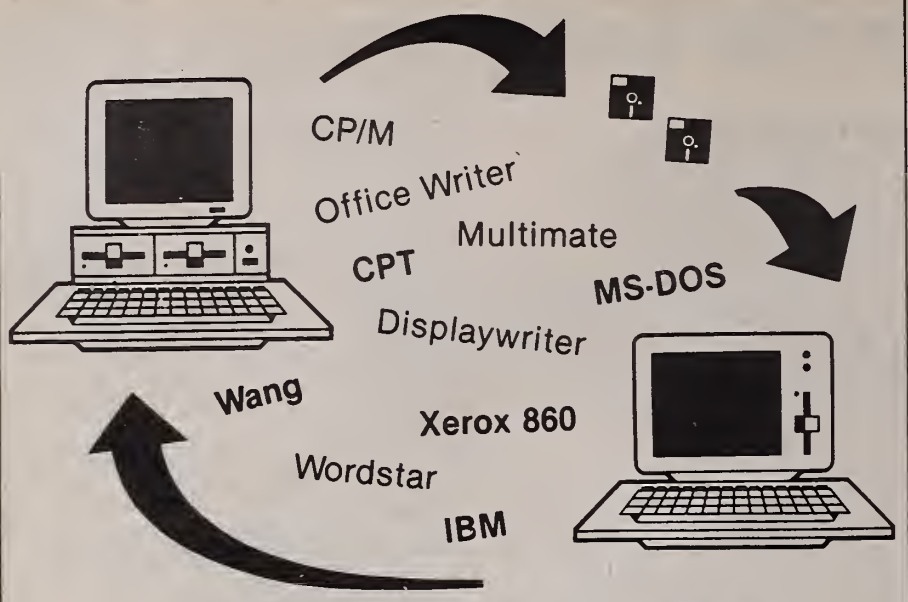


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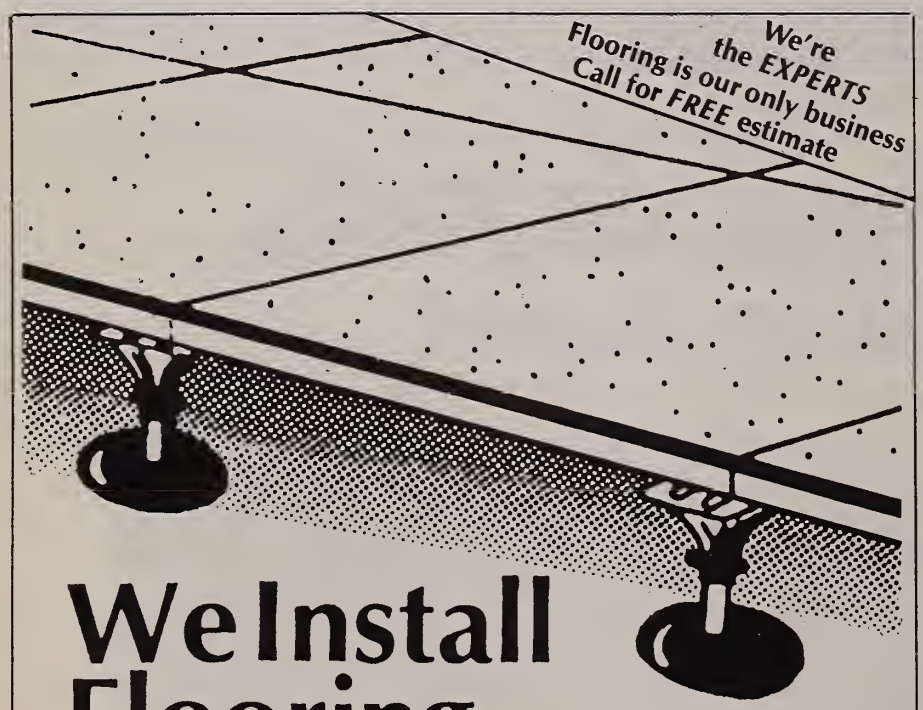


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# Amiga Faire In San Jose

The first Amiga Faire will be held on Friday and Saturday, April 4 and 5, at the Ste. Claire Hilton at Market and San Carlos Streets in San Jose. Friday's session will run from 12:30 to 4:30 pm, Saturdays' from 9 am to 4:15 pm. Admission is free.

This all-Amiga show will feature many exhibitors of products for the machine; seminars will also be offered each day by selected manufacturers.

On Friday and Saturday, Mimetics will present a seminar on the MIDI musical instrument interface and related products, and A Squared Systems will demonstrate Amiga LIVE!, its video digitizer. On Saturday only, Metadigm will discuss its products *Program Debugger* and *Program Editor;* Electronic Arts will show new and future products for Amiga, and Bob Parisau, the vice president of software development for Amiga, will host a roundtable for local developers.

The exhibitors also promise to have much of interest to the Amiga user: Amiga Man will be bringing seven disks of what he terms "very polished software," including systems utilities, scientific programs, home and entertainment packages, plus educational software and games. The products are both icon and menu driven, with voice and mouse control.

Okidata will be exhibiting the Okimate 20 multi-color printer in conjunction with Electronic Arts' *Deluxe Paint*. Chang Labs will demonstrate its *Rags To Riches* accounting software.

The event offers something for everybody, from the new user to the gamer or graphic artist to the product developer. For exhibitor or other information call (408) 295-7334. □

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# Source Print: Help For Programmers

**By Doug Pencille**

Source *Print* is a structured formatting utility package for the serious programmer and professional software developer. Its purpose is to organize and enhance the readability of programming language source code and various types of text information. Source *Print* supports the Basic, Pascal and C Languages, and the procedural languages of *dBASE II* and *dBASE III*. No matter how complex your code or how many layers of nested sub-routines it has, Source *Print* will handle all of the details and provide an array of views to the screen, printer or disk file.

*dBASE* users will flip over the added readability and organization of their source code listings. Figure 1 shows how the endless vertical listing of a *dBASE* source code can take on a whole new—and understandable—look when line numbers, indentation and structure are added. Reserved words for each language can be automatically printed in a bold format to enhance comprehension and aid in the debugging process, or strictly for educational purposes. Programmers often spend hours drawing lines to outline routines and sub-routines. With Source *Print*, a single letter command will print the listing, lines included.

The program works as a filter, and does not change the original source code in any way. Source *Print* reads the source input file and manipulates the format according to the search parameters supplied by the user, and dumps the embedded output to the selected device. The program is only resident in memory until the output is complete, at which time the system returns to the DOS prompt. It is possible to have dozens of formats of the same code sent to an output device, or the user may select the "Just-copy" mode, which outputs the pure source code with no formatting. Source *Print* can extract selected portions, functions, ranges and procedures for one to 16 input files. The serious programmer will find the Cross Reference Indexing and Table of Contents characteristics of Source *Print* most helpful in program manipulation and enhancing. By using title and sub-title breakdowns, the Table of Contents (figure 2) yields page and line number of title location along with time, date and input file names for quick reference. A Cross Reference Index (figure 3) can be requested at the input command line for indexing word strings. When a specific language is specified, reserved words are not indexed. The output produces a detailed map of the program occurrences of each word string by page and line number.

**Figure 1**
A typical *dBASE* listing on the left, and the same listing using numbering and structuring on the right.

```
b=3                    10   b=3
do while b>0           11   do while b>0
seek str (b,7,0)       12       seek str (b,7,0)
if r>s                 13       if r>s
do part with s,r       14       do part with s,r
if (j-s)>(s-j)         15           if (j-s)>(s-j)
replace list with s    16           replace list with s
seek str (p+1,5,0)     17           seek str (p+1,5,0)

endif                  25       endif
p=p+2                  26       p=p+2

endif                  32       endif
enddo                  33   enddo
```

**Figure 2**
Table of Contents for C program

| 06-07-85 12:13:01 | CONTENTS | | | |
|---|---|---|---|---|
| Last modified | File | Title/subtitle | page | line |
| 05-04-85 09:20:11 | mainfile.c | Lex routines | 1 | 1 |
| 05-04-85 09:20:11 | mainfile.c | remblk - remove blinks | 1 | 3 |
| 05-04-85 09:20:11 | mainfile.c | getlex - get lexeme | 2 | 88 |
| 05-04-85 09:20:11 | mainfile.c | Main routines | 3 | 237 |
| 05-04-85 09:20:11 | mainfile.c | main | 3 | 244 |
| 05-04-85 09:20:11 | mainfile.c | getcomd - user input | 4 | 361 |
| 05-27-85 11:16:23 | subs.c | Error subs - error handling | 6 | 1 |
| 05-27-85 11:16:23 | subs.c | Utility routines | 11 | 266 |
| 05-27-85 11:16:23 | subs.c | recov - advance tp. | 12 | 323 |

**Figure 3**
Cross Reference Index of partial Pascal program

| 12-25-85 23:22:36 | | demo.pas | string/page-line | | | |
|---|---|---|---|---|---|---|
| clrflags | 2-27 | 3-163 | | | | |
| errprc | 2-78 | 3-154 | | | | |
| firstpass | 2-85 | 3-161 | | | | |
| flagsort | 2-91 | 3-167 | | | | |
| integer | 1-18 | 1-19 | 2-95 | 2-96 | | |
| list | 1-19 | 1-28 | 1-29 | 1-34 | 1-35 | 1-43 |
| | 1-44 | 2-96 | 2-105 | 2-106 | 2-111 | 2-112 |
| | 3-120 | 3-121 | | | | |
| listint | 2-88 | 3-164 | | | | |
| loopprc | 2-67 | 3-143 | | | | |
| part | 1-25 | 2-56 | 2-102 | 3-132 | | |
| setflags | 2-77 | 3-153 | | | | |

Other handy functions of Source *Print* include multiple file printouts, selection of print and manipulation by line number range, title and subtitle, selected program function manipulation from files and extractions of files to form new source files.

Source *Print* operated smoothly and without error in our test. Code line formatting begins immediately after the program is loaded, and is able to format approximately a page of text per second. The only limitation that may cause hindrance to the programmer is the maximum of 32760 lines in any one input file. The program is supplied on a single floppy disk (not copy protected) with demo programs for each language supported. There are no installation or set-up procedures involved, and it is executable from hard disk. (Source Print is available from: Aldebaran Laboratories Inc., 3738 Mt. Diablo Blvd., Lafayette, CA 94549 [415] 283-7084.)

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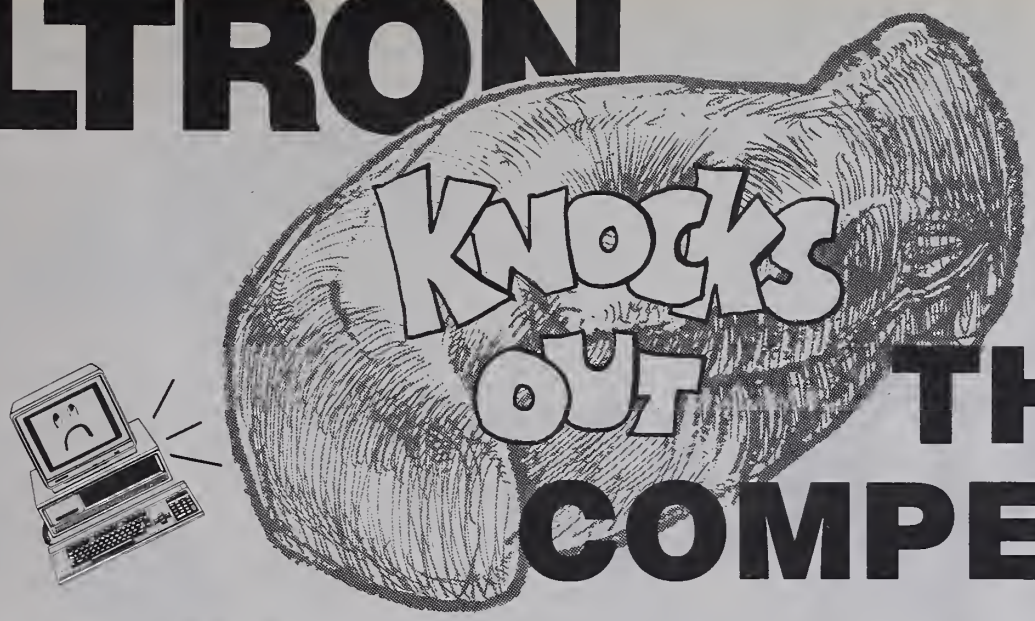


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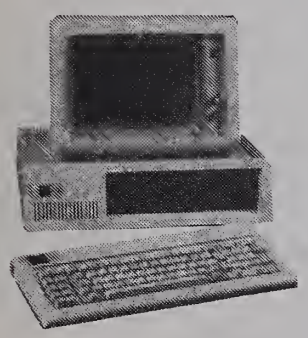

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# Tempo: Macros For The Mac

By Bruce A. Fraser

Now that the Macworld Expo has come and gone, the general consensus seems to be that this year's big news was on the hardware front: the Mac Plus, double-sided drives, memory upgrades and a plethora of hard disks. However, one software package which debuted at the show caught my eye (and wallet), and I'm glad it did, because it has boosted my Mac productivity as much as any other single package I've yet encountered. *Tempo* masquerades as a desk accessory, but believe me, this isn't just another "executive decision maker," or a print spooler that doesn't work with graphics, or a "screen saver" which stops your unattended printing when it activates. No, this one really does something!

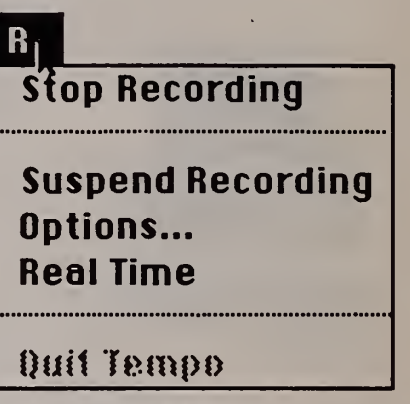
*Tempo* is a macro recorder for the Macintosh. Macros are user-defined commands which carry out a series of operations under a single command. Users of "real" (IBM) computers and "real" (*Lotus 1-2-3*) software have been sneering at us Mac users over the lack of such a feature in Mac software since day one. Most programs which support macros make use of macro languages, which are, in general, distinctly un-Mac-like, making use of a bewildering array of backslashes, semicolons, ( ), [ ], and so forth.

*Tempo* takes a different approach, recording — one which most Mac users will find easy to grasp from the outset. To record a macro, select *Tempo* from the Apple menu. A new *Tempo* menu appears to the right of the menu bar. You then choose Start Recording from the *Tempo* menu. Once *Tempo* starts to record, every mouse movement and keystroke will be recorded and available for playback. To end recording, select Stop Recording. A dialog box will appear, allowing you to save your macro under a name, and (optionally) assign a ç-or-option key combination to it. From then on, whenever *Tempo* is active, the assigned keystroke will cause that macro to be played back.

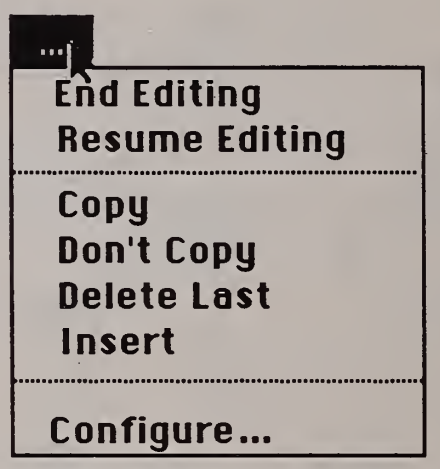
Two questions occur to me when I see a new piece of software: What can I do with it? How do I do that? If I say that *Tempo* is so versatile that this article can only skim the surface of the subject, I am not trying to avoid these questions, only giving advance warning that my answers will be illustrative examples rather than definitive statements on the subject. The following examples are drawn from my own use of *Tempo*; they all work, and all save time and effort.

*MacWrite* is greatly enhanced by the addition of *Tempo*. At the simplest level, *Tempo* can assign keystroke commands to those menu items which lack them. I use ç-s for Save, ç-o for Open, ç-option-p for Print and ç-q for Quit, enhancing the last two by automatically answering the associated dialog boxes. (Print mode set at standard, changes always saved.) I chose ç-option-p rather than ç-p to avoid conflict with the Plain Text command under the Style menu; however, in such conflicts the *Tempo* command overrides any non-*Tempo* keystroke command, so any key combination can be used. Although you can assign ç-keystrokes to menu items with *ResEd* or some of the desk

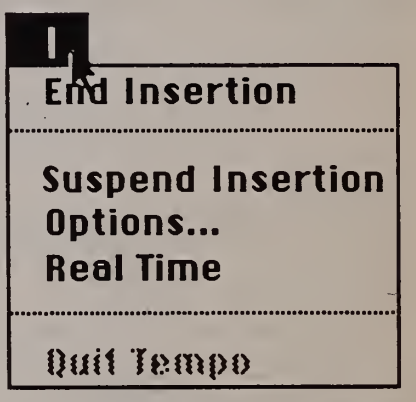
1. The Tempo Menu



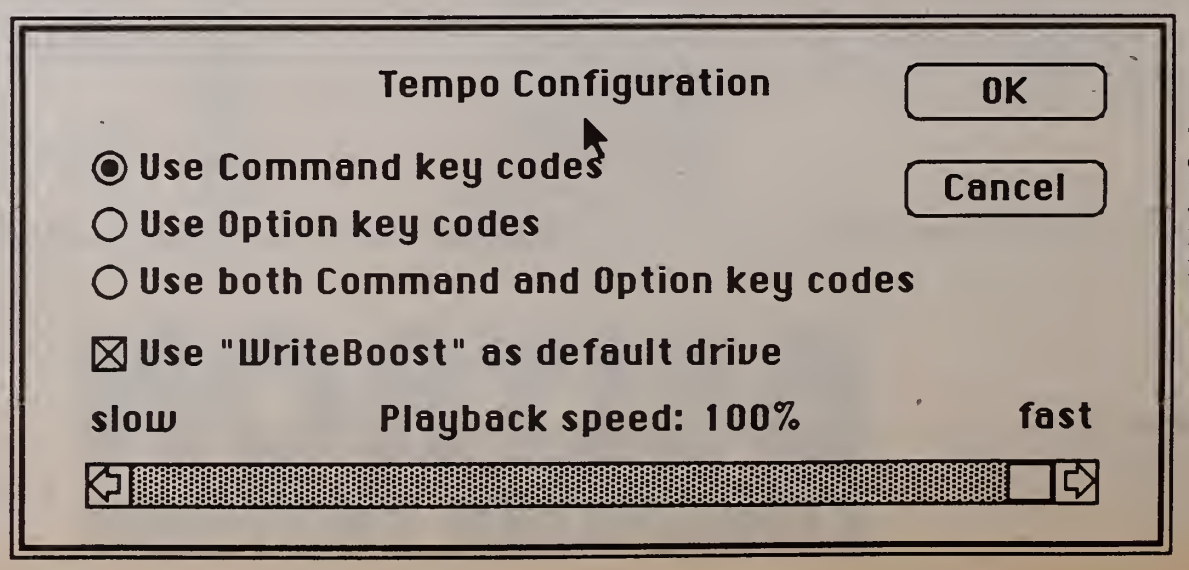

2. After Selecting Record



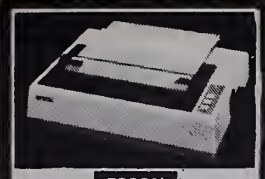

3. Clicking on the Edit menu changes the flashing E to an ellipsis, and presents these options




4. Choosing Insert presents this menu




The Configure dialog box lets you name a drive on which to store Macros, set playback speed, and assign key codes using the Command key, Option key or both.



**EPSON**

Epson FX-85 — 160cps, NLO . . . Call
FX-286 — Emulates IBM ProPrinter Call
JX-80 Color Printer — 80 column. Call
LX-80 — 80 column, NLO mode . Call
LO-1500 — 200cps, 24-pin head . Call

**OKIDATA**

182P, 120 cps, 80 Col., Parallel . . $239
84P, 200 cps, 136 col. Parallel. . $649
192P, 160 cps, 80 col. Parallel . . $349
193P, 160 cps, 136 col. Parallel. . $549
2410P, 350 cps, 136 col. Parallel $1895

**IBM**

IBM ProPrinter — 200cps, 80 col .$469
IBM Color Jet — 80 column . . . .$645
IBM QuietWriter II - 60cps, 132 col.Call
IBM Wheel Printer — 25cps, 132 colCall

**TOSHIBA**

P351, 240cps, 136 Col., 24-pin head, plug-in font cartridge, Para. . $1,049
P341 — Like P351 but slower . . $935
P1340, 192cps, 80 Col., 24-pin . .$425
Bi-directional Tractor . . . . . $195

**CITIZEN**

MSP-10 — 80 column. . . . . .$249
MSP-15 — 132 column . . . . . .$349
MSP-20 — 80 column. . . . . .$319
MSP-25 — 132 column . . . . . .$485

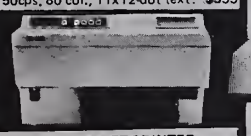
**STAR GEMINI**

SB-10, 24-pin, 80 column . . . . .Call
SG-10/15, SD-10/15, SR-10/15 . . Call

**DIABLO**

Diablo 630 API, 40 cps daisywheel printer . . . . . *Sale Price* $1,295

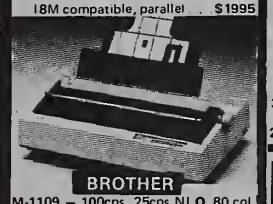
H-P ThinkJet Ink Jet Printer
150cps, 80 col., 11x12-dot text. $399



H-P LASERJET PRINTER
300cps, quiet operation, serial. $2,395
H-P LASERJET PLUS . . . . . $3,295

**Canon**

Canon Laser Jet A-1, comes w/4 fonts, downloadable to 20 fonts max. IBM compatible, parallel . . . $1995



**BROTHER**

M-1109 — 100cps, 25cps NLO, 80 col. 2K buffer, dual interface. . . . Call
M-1509 — 180 cps, (45cps NLO), 132 col., friction feed and the new push type pin-tractor so first form won't be wasted. IBM and Epson FX-100+ compatible. Very quiet operation. Dual interface . . . . . .$399
Sheet Feeder SF-40 for M-1509. . Call

HR-15XL — 17cps daisywheel printer, 3K buffer, two color printing, can be used as a typewriter w/optional keyboard. Parallel . . *Sale* $329
Keyboard for HR-15 . . . . . .$149
Tractor for HR-15 . . . . . .$119
Cutsheet feeder for HR-15. . . .$189

2024L — 160cps, 24-pin head letter quality dot matrix printer, 136 col. w/tractor, parallel . . . . . .$925
TwinWriter — Two heads are better than one! 160cps dot matrix and 36 cps daisywheel combined into one printer. Parallel interface . . $985
HR-25 — 23cps daisywheel, para $480
HR-35 — 36cps daisywheel, para $685
DM-40 — 160cps, 24-pin dot matrix 136 col., with tractor, para $925

**FORTIS** — *by Brother*

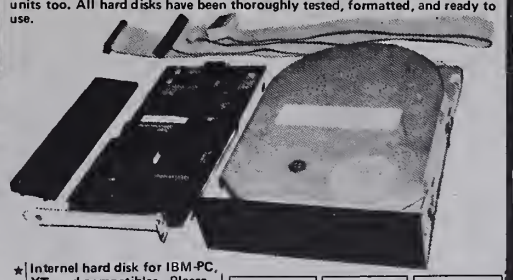
Fortis 15XL — 17cps daisywheel printer w/3K buffer. Parallel . $SALE!
Fortis DM-20 — 160 cps dot matrix, 136 col., NLO mode, both parallel and serial interfaces . . . . . $525
Fortis DX-25 — 25cps daisywheel, 132 column, 7K buffer, quiet operation, built-in parallel & serial. . . . Call
Fortis DH45 — Dual head printer, 160 cps dot matrix, 36 cps daisywheel, Epson, Diablo compatible . . $985
Tractor for 15XL/HR-25. . . . . .$119
Keyboard for 15XL. . . . . .$149
Cutsheet Feeder for HR-15/25 . .$189
SF-200 Feeder for DM-40/2024L $275

**PANASONIC**

KX-P1091, 120 cps, 80 columns, with near letter quality mode . . $239
KX-P1092 . . . . . $345
KX-P1093 . . . . . $425
KX-P3151 . . . . . $405

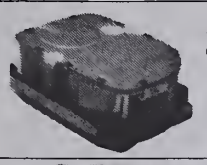
# HARD DISK SALE!

Now is time to upgrade your computer at tremendous savings. These compact half height hard disks consume little energy and leave room for tape backup units too. All hard disks have been thoroughly tested, formatted, and ready to use.



★ Internel hard disk for IBM-PC, XT, and compatibles. Please specify your computer model.
★ Compact, half height units.
★ Famous brands
★ Complete with controller card, cable & mounting hardware.
★ Boots directly from hard disk.
★ Low power consumption.

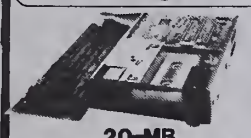
| 10-MB | 20-MB | 30-MB |
|---|---|---|
| $385 | $445 | $649 |
| Seagate/ Tulin/ MicroScience | Seagate, MicroScience | Tulin |



**HARD DISKS FOR IBM-AT**

High performance full height hard disks. Complete with cable and mounting rails.

20-MB Disctron . . . . . $395
20-MB Seagate . . . . . $579
30-MB Seagate . . . . . $689
40-MB Seagate . . . . . $895
72-MB Toshiba . . . . . $1,550



**20-MB TEAC TAPE BACKUP**

Super fast 4 MB per minute transfer rate. Both mirror image or file by file backup. Uses small ¼" cassette tape. Complete with interface card & tape. Internal unit — $695
External unit comes with power supply, surge protector and lighted selector switches for 3 other accessories — $955

**IRWIN 10-MB TAPE BACKUP**

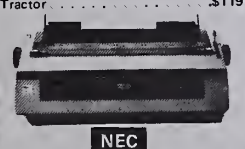
Internal half height unit. Direct connects to floppy controller card without taking up a slot. Complete w/$30 tape, software and instruction. . . . . $449

**EVEREX**

EVEREX 20-MB Internal Tape Back-Up for PC and XT, 4 MB/minute transfer rate. Complete w/control card, cable and manual . . . $695
EVEREX 60-MB Internal Tape Back-Up for AT. Complete with controller, cable and manual . . .$885

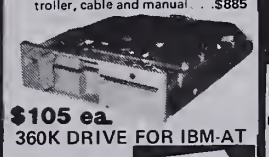
**JUKI**

6100 — 18 cps, 13" platen, 2K buffer, buffer, parallel. . . . . .$379
6300 — 40 cps, 132 col., 3K buffer $689
Tractor . . . . . .$119

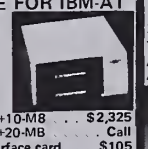


**NEC**

3550 - 33 CPS, 203 col., proportional space, bi-directional, parallel. $795
2050 Similar to 3550 but 19 cps $595



**$105 ea.**
**360K DRIVE FOR IBM-AT**



**i-MEGA**

Bernoulli Box, 10+10-MB . . . $2,325
Bernoulli Box, 20+20-MB . . . . Call
Non-bootable interface card. . . .$105
Bootable interface card. . . . . .$229
10-MB Cartridge. . . . . .$50
20-MB Cartridge . . . . . .$60

**AST**

Cards for IBM PC and XT w/Free Sidekick software

**SixPakPlus Cards**

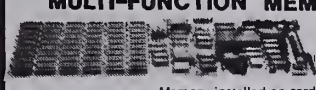
| Memory installed on card | 64K | 128K | 192K | 256K | 320K | 384K |
|---|---|---|---|---|---|---|
| with paralle, serial ports & clock | $219 | $229 | $239 | $249 | $259 | $269 |
| above plus game port | $254 | $264 | $274 | $284 | $294 | $304 |

Advantage Card for IBM-AT *128K* - $399 *256K* - $429 *384K* - $459
*512K* - $515 *1-MB* - $565 *1.5-MB* - $615

ADVANTAGE PEGGYBACK *512K* - $215 *1-MB* - $265 *1.5-MB* - $315

RAMpage Card for IBM-PC/XT ---------- *256K* - $325 *2-MB* - $595
RAMpage Card for IBM-AT ---------- *512K* - $495 *2-MB* - $659

**MULTI-FUNCTION MEMORY CARD**

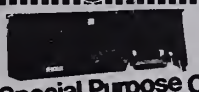


Fully compatible with IBM-PC and XT. Comes with Ram disk and print spooler software.

| Memory installed on card | 0K | 256K | 384K |
|---|---|---|---|
| w/parallel, serial, game ports, clock | $109 | $159 | $179 |

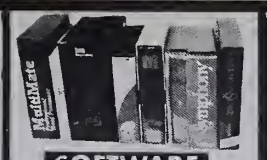
**intel ABOVE BOARDS**

| | 64K | 256K | 2-MB |
|---|---|---|---|
| FOR IBM-PC/XT | $325 | $399 | $795 |
| | 128K | 512K | 2-MB |
| FOR IBM-AT | 495 | $595 | $895 |



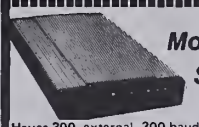
**Special Purpose Cards**

Hercules Graphic Cerd . . . . . .$289
Hercules Color Cerd — short card .$145
Paredise Multi-Display Card . . . .$275
Paradise Modular Displey Cerd . . .$245
Paradise Color/Mono Card . . . . .$199
Generic Color Graphics card w/printer port. . . . . .$125
Monochrome Graphics Card w/parallel port. Hercules compatible . . .$115
AST Preview graphics w/para. . . $249
Sigma 400H Color for PGS SR-12 $455
Sigma 400L Color for Taxan 440/630/640 monitors : . . . . . .$455
Taxen 555 Hi res. color card. . . .$225
Persist BOB Board — Ultra hi res. color card. Ideal for Taxan 630/640 $389
Everex The Edge . . . . . .$275
Everex Graphic Edge . . . . . $295
PC Peacock Color Cerd. . . . . .$279
Ultra Pak by Tzeng Lab . . . . . .$485
Tecmer Graphic Master. . . . . .$465
Tall Tree J-Diskette Controller to hook up 1.2-MB drives in PC/XT . .$229
Floppy Disk Controller with parellel, serial, geme ports and clock . .$145



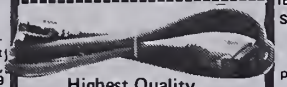
**SOFTWARE**

| | |
|---|---|
| Word Perfect | $199 |
| Lotus 1-2-3 | $319 |
| SYMPHONY | $419 |
| dBASE II | $275 |
| dBASE III | $369 |
| FRAMEWORK | $369 |
| WORDSTAR PRO PAK | $279 |
| Wordstar 2000 | $259 |
| R-Base 5000 | $389 |
| Q & A | CALL |
| Turbo Lightning | $57 |
| Reflex | $57 |
| Side Kick | $49 |
| IBM Top View | Call |
| IBM DOS 2.1 or 3.1 | $69 |



**Modem Sale!**

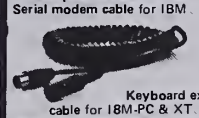
| | |
|---|---|
| Hayes 300, external, 300 baud | $145 |
| Hayes 1200, external, 1200 baud | $365 |
| Hayes 1200B, internal w/software | $339 |
| Hayes 2400, external 2400 baud | $579 |
| AST Reach, 1200 baud internal | $435 |
| Watson Voice/Data Modem | Call |
| Watson VIP | $275 |
| Prometheus 1200 external | $295 |
| Prometheus 1200B internal | $265 |
| Everex 1200B internal modem | $225 |



**Highest Quality Shielded Cables**

*These cables are the very best money can buy. Lifetime warranty. List $65*

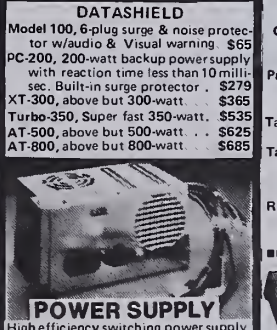
Parallel printer cable for IBM . . $19
Serial modem cable for IBM . . . $19



6-foot Keyboard extension cable for IBM-PC & XT . . . $8

**DATASHIELD**

Model 100, 6-plug surge & noise protector w/audio & Visual warning . $65
PC-200, 200-watt backup power supply with reaction time less than 10 millisec. Built-in surge protector . $279
XT-300, above but 300-watt . . . $365
Turbo-350, Super fast 350-watt. . $535
AT-500, above but 500-watt . . . $625
AT-800, above but 800-watt . . . $685



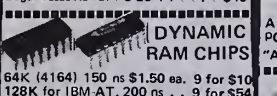
**POWER SUPPLY**

High efficiency switching power supply. Built-in EMI filter, over voltage & short current protection. 115/230VAC jumper selectable. 100% thermal cycle and burnt-in. Has additional outlet for hard disk or tape backup unit.

150-WATT -----$85

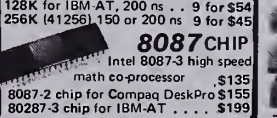
**Canon PERSONAL COPIERS (PC)**

PC-10 Copier — Manual feed, compact size . . . . . ($795) $544
PC-20 Copier — 100-sheet feeder, 1-19 copies. . . . . ($1,095) $788
PC-25 Copier — Make copies up to legal size from original as big as 10x 14. Enlarge 120%, reduce 67% or 78%. . . . . ($1,395) $888
Black toner/drum cartridge . . . . $69
Blue, brown, red cartridge . . . . $79
Legal cassette for PC-25 . . . . . $49



**DYNAMIC RAM CHIPS**

64K (4164) 150 ns $1.50 ea. 9 for $10
128K for IBM-AT, 200 ns . . 9 for $54
256K (41256) 150 or 200 ns 9 for $45



***8087* CHIP**

Intel 8087-3 high speed math co-processor . . . . . $135
8087-2 chip for Compaq DeskPro $155
80287-3 chip for IBM-AT . . . . $199

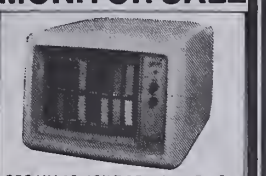
*SPEED UP YOUR PC/XT NOW*

with NEC V-20 processor chip.
Direct replacement of the 8088-3 chip.
*Now* $49

**AT&T 6300 COMPUTER**

640K memory, 1 floppy drive, serial & parallel ports, clock, Monochrome and RGB color ports, keyboard . . $1550
Above with two 360K drives .... $1650
640K memory, 1 floppy drive, 20-MB hard disk, serial, parallel ports, clock, mono & RGB ports, keyboard. $1995
AT&T Green Monitor . . . . . $259
Taxan 630 super high resolution color monitor . . . . . $495
D.O.S. . . . . $65

# MONITOR SALE



PGS HX-12, 12" RGB color, high resolution 690x200-dot 16-color, matching IBM case **Sale $425**

**★★★★ RGB COLOR ★★★★**

IBM RGB Color Monitor . . . . $545
IBM Enhanced RGB Monitor . . .$689
SONY KV-1311CR — RGB Color Monitor, 680-line resolution, also a Trinitron Color TV with remote control . . . *A Fantastic Buy* $544
PGS SR-12E — Super high resolution RGB Color Monitor, operates w/ Sigma 400H Color Card . . .$595
Ouimax PX-IV — 13" RGB, 720x240 line. Has green switch, tilt & swivel base . . . . . .$445
Taxan 620 RGB Color Monitor . $429
Taxan 630 RGB Hi Res. monitor $495
Taxan 640 RGB Hi Res. monitor .$549

**★★★ GREEN SCREEN ★★★**

Taxan 121, 12" green, 1000x360 dots, TTL monochrome . . . . . $155
Ouimax DM-14G — 13" green TTL, 750x350 resolution, tilt & swivel base included. 1 yr. warranty $155
Taxan 115, 12" green composite .$125
IBM Monochrome, 12", 720-dot .$255

**★★★ AMBER SCREEN ★★★**

Amdek 300A, 12" amber . . . . $149
Amdek 310A, 12" amber, 900 dots, non-glare screen, runs off IBM monochrome interface board .$169
Ouimax DM-14A — 13" amber TTL, 750x350 resolution. Tilt & swivel base included. 1 yr warranty.$159
Princeton MAX-12, 12" amber, 720 x 350 dot, runs off IBM monochrome display adapter . . . . . $169
Taxen 122, 12" amber, 1000x360 dots, TTL monochrome . . . . . $159
Taxan 116, 12" amber composite $129

**★☆★ BLACK & WHITE ★☆★**

Roland MB-142, 14" reversible black & white TTL monochrome monitor w/ super hi res. 720x350 dots. . $269

**PLOTTER SALE**

**ROLAND**

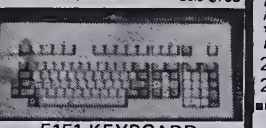
DXY-800 — 8-pen, hi-speed 180mm/sec. IBM compatible. 11x17" paper . .$Call
DXY-880 — Similar to 800, 8-pen, Hewlett Packard compatible . . . $Call
DXY-980 — above but w/digital display & electro-static paper holder. . Call

**HEWLETT PACKARD**

7470A — 2-pen, 8½x11 paper size $899
7475A — 6-pen, 11x17 paper size $1495

**TAXAN**

710S — 6-pen color plotter, Hewlett packard compatible. *Sale* $795



**5151 KEYBOARD**

A quiet, soft-touch keyboard for IBM PC, XT or Compaq Desk-Pro. . . $99
"AT" Style keyboard for PC & XT $159

**The POWER DIRECTORS**

P-22 — A unique control center & surge protector w/4 lighted and a master switches for computer, printer and accessories. It also filters out EMI & RFI interferences . . . . . $79
P-2 — like P-22 but w/5 switches $109
P-12 —Has 6 switches & clock . .$149

**IBM®**

# PC XT AT

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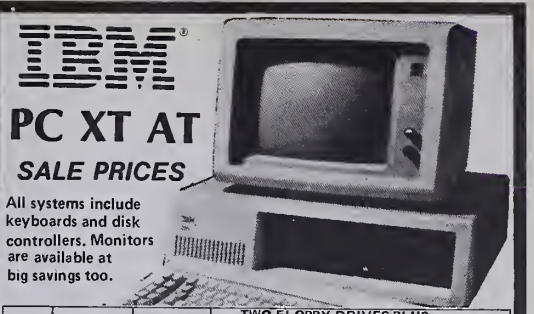

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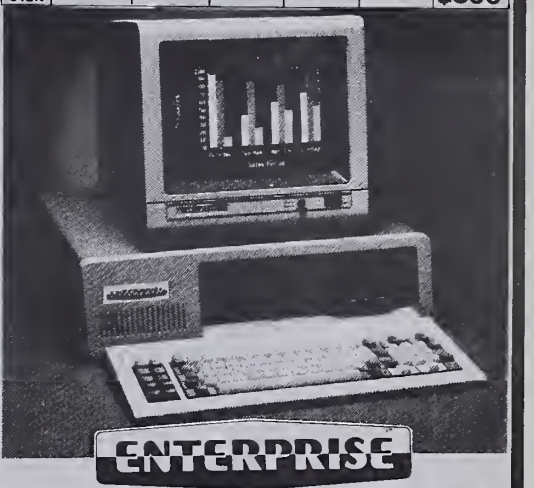

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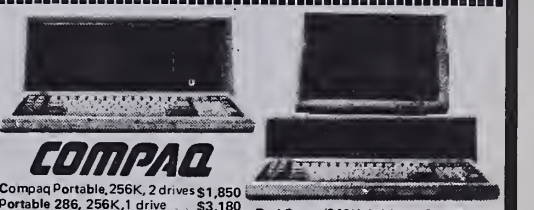

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accessory packages, you still have to answer the dialog boxes, and you cannot use c-option combinations. *Tempo* addresses both of these shortcomings and also allows you to use the Shift and Caps Lock keys as additional modifiers, giving a possible total of 450 keystroke commands in any single application.

A tedious chore which LaserWriter users have to perform regularly is converting text from Mac fonts to LaserWriter fonts. (The LaserWriter will do this automatically for you, but it slows down the printing considerably, a consideration those of us who rent time on LaserWriters have to bear in mind.) The Mac screen versions of the LaserWriter fonts are almost impossible to read, especially in the smaller sizes, so I do all my writing in Geneva and convert to Helvetica or Times after final proofing, at which point I can go to my local computer store and print on the LaserWriter without having to fix things once I get there. It's quite easy to record a macro to convert a whole *MacWrite* document from one font to another, but it does require some thought and an understanding of how *Tempo* works.

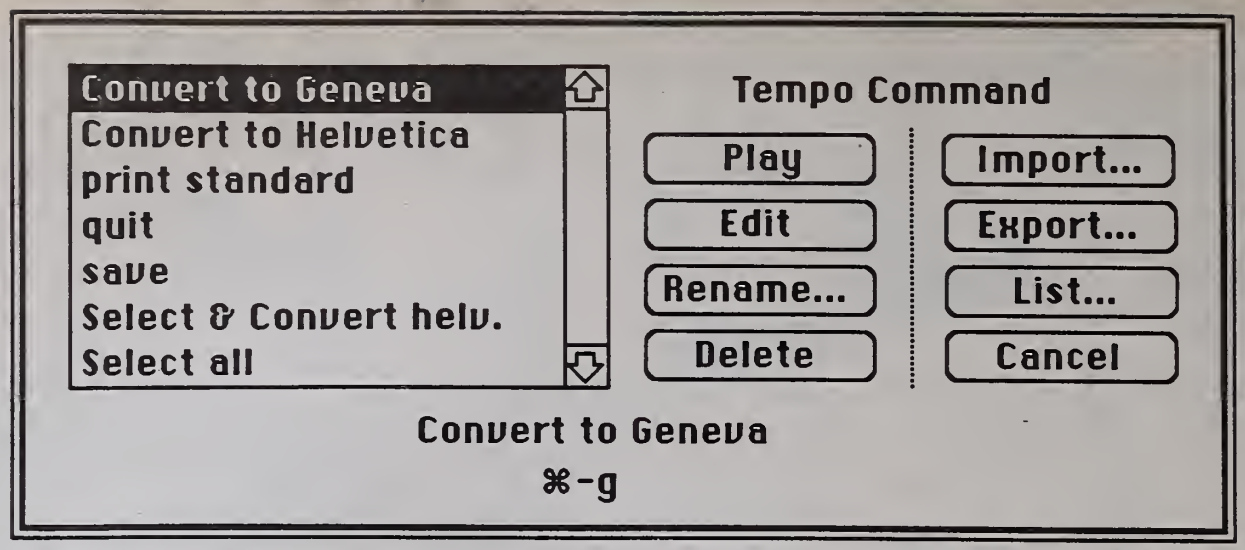
*Tempo* has two recording modes, normal and Real Time. The Real Time mode is designed primarily for tutorials, guided tours and demos. It faithfully records every mouse movement, pixel by pixel, and every pause and hesitation. Although it is undeniably impressive to watch the mouse cursor take on a life of its own and, for example, re-create a graphic, Real Time recording builds very large macro files, so unless you have a hard disk with a lot of unused space on it, most of your *Tempo* macros should be recorded in normal mode. However, the possibilities for creating self-running demos and interactive tutorials, without any programming knowledge, could create a new market all by themselves.

In normal mode, *Tempo* records keystrokes, "mousedowns" (i.e. the point at which you press the mouse button), and "mouseups" (i.e. the point at which you release the mouse button). Grasping this point is crucial to making *Tempo* work for you, because the absolute position of the mouse is what it records. If you record a macro which involves double-clicking on an icon, and then later move the icon, *Tempo* will end up double-clicking on a blank desktop, or another icon, or someplace else equally unsatisfactory. Keeping this in mind, let's look at the macro to convert a document from Geneva (or any other font) to Helvetica.

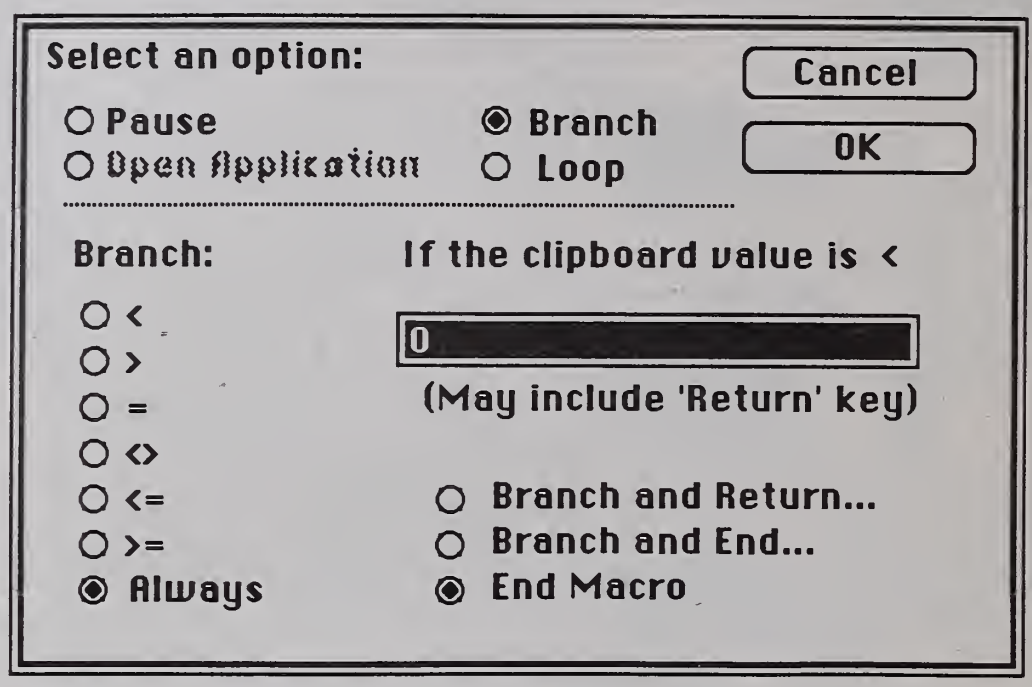
First select *Tempo* from the Apple menu. A ç will appear at the extreme right of the menu bar — this is the *Tempo* menu. Choose Configure and check the option marked "Use Command and Option Keys." Playback speed is set at 100%, but may be slowed down to 10% (glacial) for editing and demonstration purposes. Next select Start Recording. The ç will change to a flashing R, for record. The first step in changing the Font is to select the whole document. Just going to the scroll bar and dragging the "thumb" (the small white rectangle in the scroll bar) will not give consistent results on playback — the cursor will go to the same spot on the scroll bar every time, irrespective of where the thumb is, resulting in unpredictable scrolling.

Instead, go to the Search menu and choose Go to Page #.... Type "1" in the "page #" dialog box and hit Return or click OK. The document will scroll to the end of the last page. Hold down the Shift key and place the cursor at the very end of the document, as far down and to the right as you can go without the cursor changing from an I-beam to an arrow. (You might not be able to see any text, and clicking the cursor will have no apparent effect. This is because the action is taking place off-screen.) This procedure will select everything between the current insertion point and the last insertion point, which should be the whole document. Return to the *Tempo* menu and choose Stop Recording. A dialog box will appear asking for a name to save the macro under, and giving the option of assigning a keystroke to run it. I chose to name it Select All and assign ç-a to it, following standard Mac conventions. Now return to the *Tempo* menu and Start Recording again. Choose Helvetica from the Font menu, and Stop Recording. Save the macro as Helvetica.

Now that we have the two components necessary for our task, it only remains to join them together. Choose Record from the *Tempo* menu, then select Options. A dialog box offers a choice of Pause, Branch or Loop, (plus a dimmed button for Open Application which only works in the Finder). Choosing Branch brings up a new set of options which I will discuss more thoroughly later. For now, select Always, which will return you to the *Tempo* Command minifinder. Choose Select All, then go to the *Tempo* menu and choose Options once more. This time, Branch Always to Helvetica, then End Recording. Save the macro as Convert to Helvetica. I use ç-option-h to invoke the macro, but you are free to choose any keystroke you wish. This might seem like a lot of work to go through to accomplish a simple task, but you will only have to do it once, and when you play the macro back you will be impressed by how fast it executes — certainly much faster than a human operator could achieve (about eight seconds to convert eight double-spaced pages of 12-point type.) There is one minor constraint: you have to keep the document format consistent with regard to size of headers and footers, if any, and whether or not the ruler is displayed. (The document window starts immediately below the first ruler if it is displayed. Headers and footers also affect the position of the start of the text.) Alternatively, you can edit




The Tempo Command minifinder lists all Macros available in the current application. The List command generates a text file listing all Macro names for the application, together with their assigned keystrokes.




The Options dialog box lets you choose Pause, Branch (conditional) or Loop, (also conditional or unconditional), and from the Finder also allows you to open an Application.

**MacWrite is greatly enhanced by the addition of Tempo. At the simplest level, Tempo can assign keystroke commands to those menu items which lack them.**

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# DATA MANAGER

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### SIMULTANEOUS INPUTTING

The Data Manager has five input ports and one output port. Unique internal logic automatically allows all five input ports to receive data simultaneously either at different time rates, or at the same rate, from 150 baud up to the full transmission rate of 19.2K baud. This allows each work station to send data independently regardless of the other four work stations or of the amount of data that is queued in the buffer.

### NO OPERATOR SWITCHING

The Data Manager resources no operator switches or setup routines to output data to the printer; everything is done automatically in the internal logic. This eliminates operator confusion, and prevents data being lost through operator error, as in the case of A-B boxes.

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The Data Manager allows you to hook up any computer to your shared printer or plotter.

### INDEPENDENT PORTS

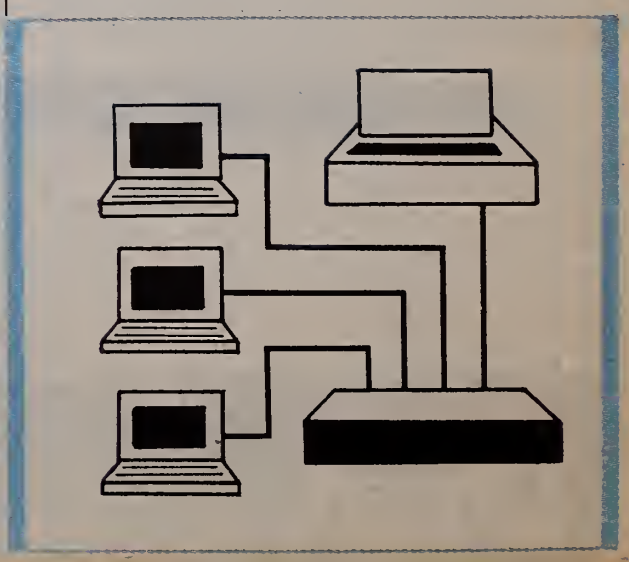
Each input port of the Data Manager functions independently from the other. The Data Manager scans each port approximately 500 times per second. Everything coming through these input ports ends up on the printer in the form in which it was sent—nothing is changed! In this manner the Data Manager allows five computers to utilize one printer as though each had a dedicated printer attached to it.

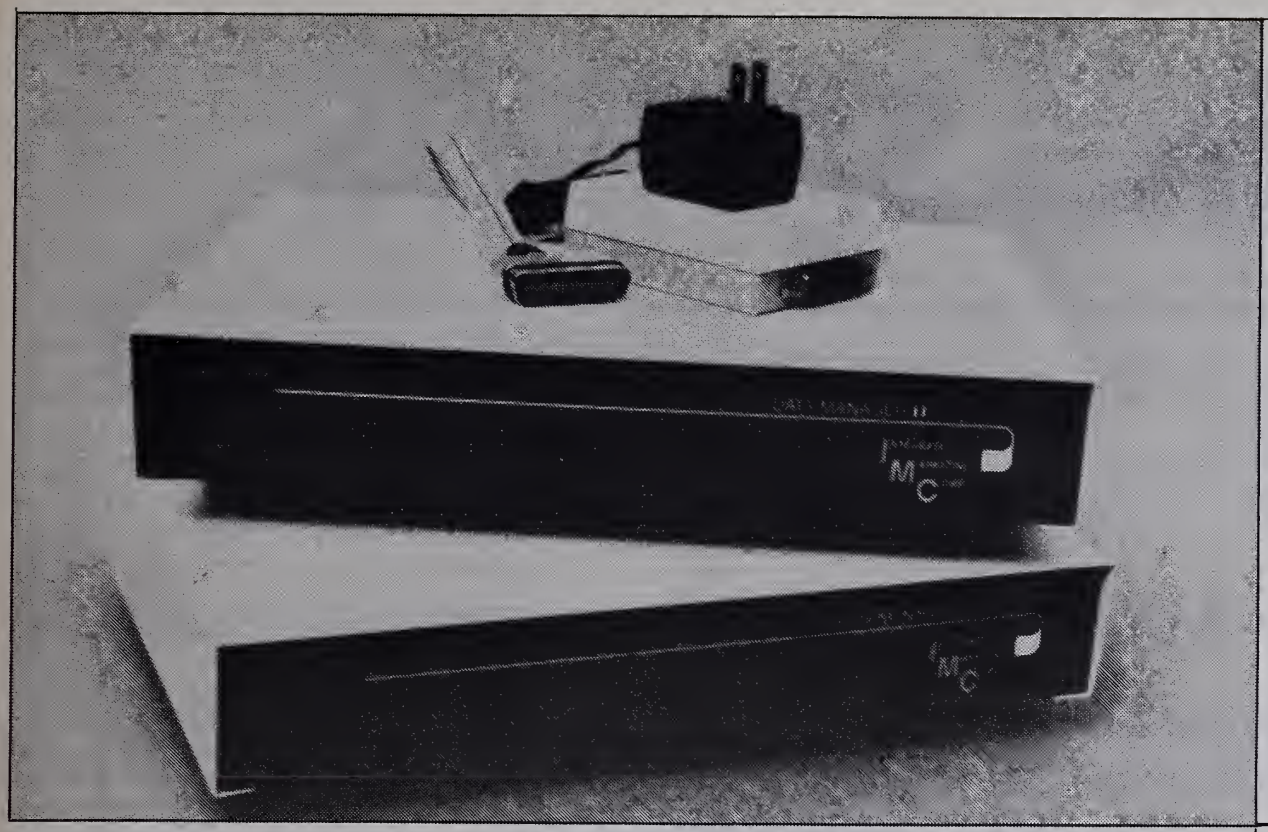
### AUTOMATIC DATA DISTRIBUTION

If the printer is busy when input is received, the Data Manager will mark the data and store it in its buffer. When the first file has been printed, the Data Manager releases the stored file to the printer. This process is repeated whenever the printer is tied up printing a job, or even if the printer is off-line. This means that you can store files to be printed (up to 27 pages) in the Data Manager, and either use your computer for another task, or switch it off and let the Data manager walk files through the printer automatically.

### FIVE BUFFERS IN ONE

The Data Manager's memory is logically manipulated to provide a dynamic balancing between all five buffers allocated to the five input ports. Each port buffer is capable of expanding from 2 pages to 17 pages to meet the needs of the individual port. This means that the Data Manager will automatically adjust its input buffer to accommodate all sizes of files without any intervention from the operator.





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## Data Manager Series

## FEATURES

The Data Manager offers something new in work stations—a print sharing network! To fill the need in providing a print sharing network which is compatible with existing systems and is easily customized, IMC offers a line of products which will allow the creation of customized print sharing work stations. These products are transparent to the user and once installed, become as unobtrusive as the interface cables of which they are a part. They require no maintenance, and have nothing to adjust or switch.

**THE DATA MANAGER**
The Data Manager is an intelligent printsharing network. It is located at a place where there is a merging of computers with a common peripheral. Files are kept separate and handled. Automatically. Special optional features like Form Feeds, Resets, Extended Time Outs for Graphics all can be supplied as needed.

**THE DATA MANAGER II**
The Data Manager II is a serial (RS232) multiple device spooler with four input ports and two internally switch-selectable or code-selectable output ports. The Data Manager II has all of the Data Manager I attributes and in addition, provides the ability to select two outputs using DIP switches or code. The Data Manager II DIP switches can be set to default to the most used output port, and the second port can be selected through software commands. For example, a set-up consisting of four computers sharing a laser printer and a plotter, which would provide a powerful printer/plotter combination through the Data Manager II. All of this is achieved by simply using software coding embedded in your file to select either the plotter or the printer, thereby eliminating the necessity of disconnecting/reconnecting or hard-switching the output devices.

A very important feature of the Data Manager series is that any, or all computers and printers can be running at the same time.

The Data Manager II can also be special ordered to have as few as two input ports and up to four output ports, enabling two computers to control up to four output devices.

**THE SERIAL-TO-PARALLEL CONVERTER CABLE.**
The Serial-to-Parallel Converter Cable allows the Data Manager to be hooked up to the Epson Parallel Printer, the Canyon series of parallel printers, or any Centronics-type parallel printer. It also allows the user to attach the Data manager to the Parallel port of any computer in the event that the serial port is unavailable. There is no need for performing any configuration, the hook-up is achieved by simply installing the cable, all of the rest is taken care of by IMC. This cable also allows up to 150 feet between systems and units without the addition of boosters.

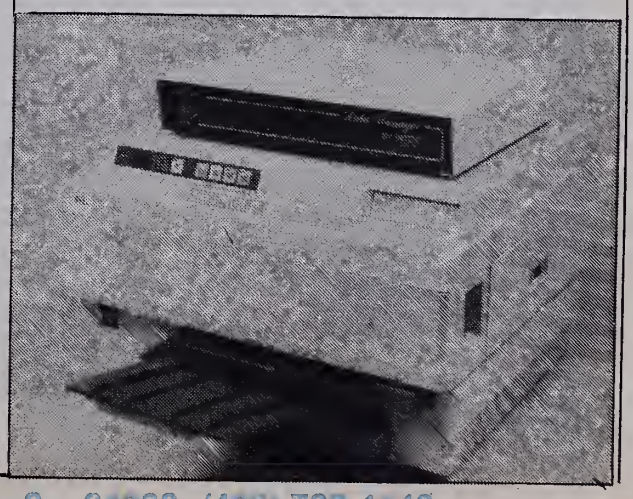
The IMC solution to print sharing networks is not just an idea on paper, it's here right now!—from the simplest operation of five computers sharing a single printer. These systems are designed to allow maximum flexibility with ease of use and provide for future expansion. With the IMC solution, you can now expand your system as your needs grow. Additional computers can be added to an existing IMC print sharing network to allow you to share the quality output devices you already own. Using IMC's print sharing networks you can eliminate the horrendous expenses incurred by individual systems with dedicated output devices, such as laser printers and high-priced plotters, and still maintain all of the "dedicated" aspects of the dedicated system, with the extremely desirable bonus of printer buffering!

## SPECIFICATIONS

**Data Manager and Data Manager II:**
**Dimensions:** 2.5 inches x 10.8 inches x 14.1 inches
**Weight:** 7.3 lbs
**Power:** 115 volts AC/200-00
**Intelligence:** Z-80 Microprocessor
**Buffer Type:** Serial I/O
**Memory Type:** Dynamic RAM
**Memory Capacity:** 64K bytes
**Ports:** 6-serial RS-232 (5-1)(4-2)
**Communications:**
  **Code:** 7-8 bits binary—switch selectable
  **Type:** Serial Asynchronous (X-ON/X-OFF)
**Parity:** Odd/Even/None—switch selectable
**Baud Rates:** 150, 300, 600, 1200, 2400, 4800, 9600, 19,200

**Serial-to-Parallel Output Converter:**

**Parallel-to-Serial Output Converter:**
**Dimensions:** 4.37 inches x 3.25 inches x 1.50 inches
**Weight:** 6 ozs. (approx.)
**Power:** 5.0 + /-0.25 volts DC (derived fro the Data Manager)
**Communications:**
  **Code:** 7-8 bits binary
  **Type:** Serial asynchronous (X-ON/X-OFF) Parallel, Centronics
**Character Size:** 7 or 8 bits (switch selectable)
**Parity:** Odd/Even/None (switch selectable)
**Interface:** RS-232-C (EIA Standard)
  Centronics Parallel (36 pin)
**Input Output:** Parallel Centronics to RS-232-C
**Baud Rates:**
  **Serial:** 150, 300, 600, 1200, 2400, 4800, 9600, 19,200—switch selectable
  **Parallel:** At computer rates up to 5.17K characters per second



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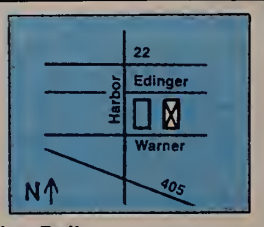


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the macro to create different versions for different document formats.

A key concept in *Tempo* lies in keeping your basic macros short and modular. You can then chain them together to create much longer sequences. If you need to interrupt a macro to edit it, simply hold down the mouse button, then click on the edit menu. The flashing E will be replaced by an ellipsis (...), and new commands become available. Most of the problems you are likely to encounter with macros not playing back as expected will involve the macro executing before the Mac is ready for it, which can produce some bizarre results. In most cases, all that's needed is the insertion of a Pause to allow the Mac to catch up. If all else fails, try switching into Real Time mode to get through the rough spots. *MacWrite* is relatively easy to add macros to — it forces *Tempo* to wait until it is ready before continuing execution of a macro — but some applications, like Microsoft *File*, will let the macro resume playback before the current task has been completed.

I needed a File macro to find groups of records, sort them in order and then print them in a format which hides the fields containing the find and sort criteria. (An example would be to sort through a mailing list, find all the records which represent clients rather than friends, then print mailing labels without the field specifying "client" or "friend.") This involves several steps, and here the importance of keeping the macros short and modular becomes more evident.

The first step is to find the records: to keep the macro general I insert a Pause for User Entry when the Find window appears, thereby allowing users to specify which records they want found. If you always want the same records (e.g. last month's transactions) this is unnecessary. Once the Find criteria have been specified, File searches through all the records for those which satisfy the criteria — and this is where the first potential problem surfaces. If your macro simply branches to the next task (Sorting, in this case) it will start to execute while File is still finding records, which at best will do nothing and at worst could be disastrous. Inserting a Pause solved the problem — make sure the Pause is long enough to give File a chance to find any set of records you are likely to specify.

I handled Sorting the same way, again including a Pause to allow the application to sort all the records. Next, I needed to change the Form from the data entry form, which displays all the fields, to the Mailing Label form, which is done in file with three commands, Show Form, Open Form, and Close Form. The records are then displayed in Mailing Label format, ready for printing. If you only need to print one collection of records at a time, Branch to a print command and then end the macro. In my situation, however, I need to print several collections of records, so I inserted another Pause to allow completion of printing, added a command to change the form back to the data entry version (all fields displayed), then Looped back to the Find command to find the next set of records. It took several attempts to get everything working perfectly, mostly tinkering with the length of the various pauses, but eventually I was able to turn on the Mac, turn on the printer, load the disks, hit a ç-key combination, then go play *Airborne* on the household's #2 Mac while the #1 Mac did my afternoon's work for me! Except for stopping in every ten minutes or so to enter Find criteria and check the paper feed, the whole operation required no attention from me whatever. Comparing this result with the old routine of "enter the Find criteria, wait 90 seconds, enter the Sort criteria, wait some more, open the form, change the form, close the form, print, change the form and do the whole thing over," I decided that even if I never used *Tempo* again I had my money's worth.

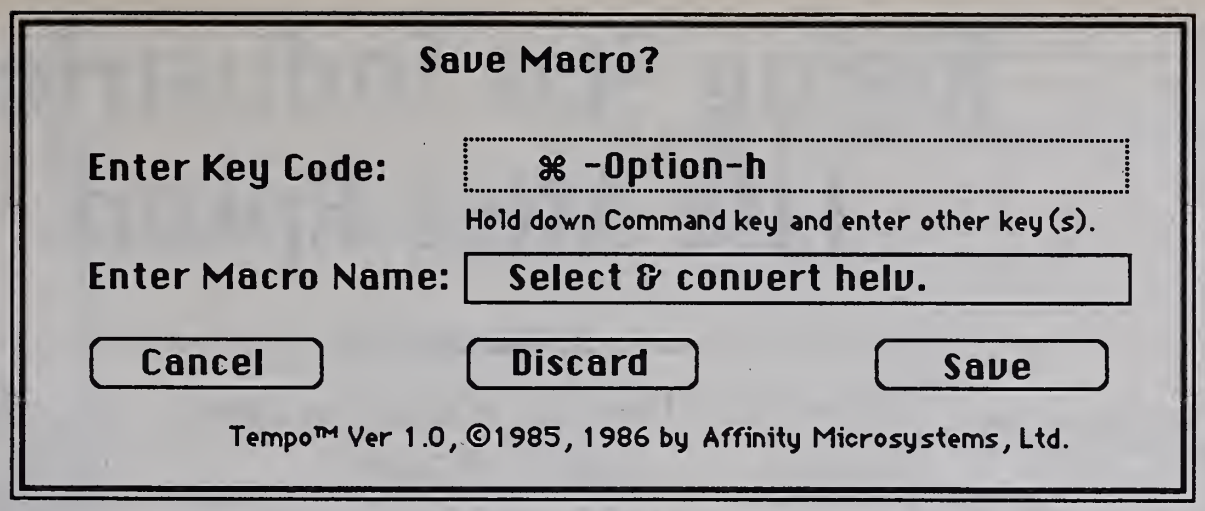
The foregoing examples barely begin to tap the power of *Tempo*. Consider these features. *Tempo* "lives through" the launch, meaning that you can automatically transfer from one application to another. (This allows you to copy a table from a spreadsheet and paste it into a formatted *MacWrite* report, for instance. Or download stock quotes via modem and paste them in a spreadsheet which would then recalculate, all while you are fast asleep!)

The Options command, which is available only in Record or Edit modes, contains a powerful set of tools, letting you give conditional instructions by comparing a selection (e.g. the contents of a spreadsheet cell) with the contents of the clipboard, using the operators =, <, >, < >, <=, §=, or Always). Branch allows branching to another macro either conditionally (=, <, >, < >, <=, §=) or unconditionally (Always) and offers as options Branch & Return, Branch and End or End Macro, enabling you to carry out an operation until your criteria are satisfied.

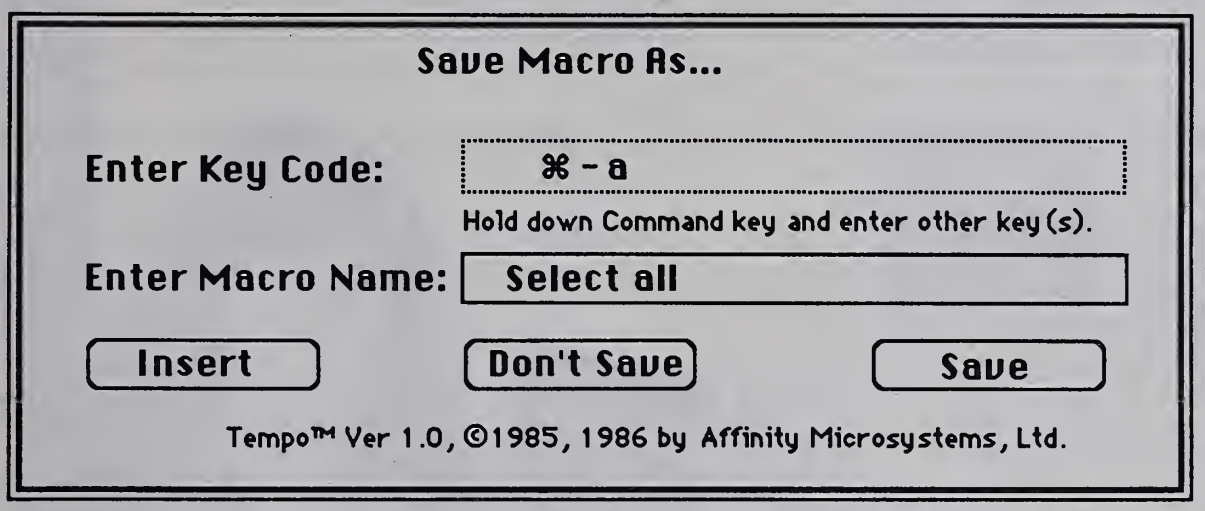
I have heard considerable gossip concerning bugs in the current release of *Tempo*, but so far the only misbehavior I have found is that occasionally, after heavy editing of a macro, I get a dialog box which says, "there has been an error in storing your Macro. You may need to discard it." When I return to the *Tempo* Commands minifinder the macro in question has invariably disappeared. So far, I have used *Tempo* successfully with *MacWrite*, *MacPaint*, *MacDraw*; all the Microsoft applications (except *Excel*, which has its own macro facility built in), *MacTools*, *PageMaker* and *Jazz*. I suspect that many of the problems reported involve the macro getting ahead of the application, with adverse results. I hope this article sheds some light.

*Tempo* installs in the system file and takes up 60K of disk space, as well as occupying two of the 16 Desk Accessory slots. However, the macro files which it builds are very compact. The macros mentioned so far take up less than 4K altogether. By renaming a *Tempo* macro file (e.g. Tempo Macros 1, Tempo Macros 2), you can create multiple files for use with different applications. *Tempo* will only recognize the file named Tempo Macros. The installation process is very simple, with prompts to guide you through every step.

*Tempo* works with RAM caches, RAM disks, and with Switcher. It supports the Hierarchical File System (HFS) which comes with Apple's Hard Disk 20, and Finder v.5.1. The documentation is on the sketchy side, but all the necessary information is in there. If all this isn't enough, *Tempo* is not copy-protected, and comes with a 90-day money-back guarantee. (*Tempo* is available from Affinity Microsystems Ltd., 1050 Walnut St., Suite 425, Boulder, CO 80302, (303) 442-4840. List Price $99.00). □




The Save Macro dialog box allows you to save, name and assign a keystroke to your Macro.




When you play back a Macro in Edit mode, a new Macro is automatically created. The Save As dialog box allows you to Insert Pause, Loops or Branches, thereby chaining Macros together to create new Macros.

**Tempo "lives through" the launch, meaning that you can automatically transfer from one application to another.**

*Bruce Fraser owns and operates MacRight Associates, a consultency dedicated to the Macintosh, and may be reached at (415) 387-2374 (voice) or through this publication.*

# Rising Star Industries: Life After Epson

By John McMullin

Since its foundation in 1982, Rising Star Industries has subsisted almost entirely on a contract with Epson America. Under that contract RSI wrote software for Epson QX-10 computers, which was then distributed by the hardware company. When the contract expired in April 1985, RSI had very little marketing experience, very little income, and very little chance for survival on its own. To make matters worse, Epson stopped sales of the QX-10 and shifted its efforts to IBM clones which run on MS-DOS software.

Instead of folding up when the Epson contract expired, however, the staff at RSI seemed to take on a new dedication during the long, hot summer of 1985. The technical staff put in many 18-hour days working the numerous "bugs" out of their *Valdocs 2* software — which Epson had introduced prematurely just before the expiration of RSI's contract. By the end of the summer the bugs were exterminated and *Valdocs+* emerged as an exciting new software concept. Two updates of *Valdocs+* have already been issued with most of the promised features included — and they all work!

Rumors abounded that RSI was also working on software for computers other than the discontinued Epson QX-10. Whenever we visited the RSI headquarters in Torrance we got an impression of high morale, an almost feverish work tempo and a strong conviction that "that lady in the front office" was guiding the company into better times.

"That lady" is Gale Carr, president of RSI, who took time from an obviously full schedule to answer our questions.

**How did you become president of Rising Star?**

For eight years before joining Rising Star I worked for, and later managed, a management consulting firm in Denmark. We specialized in teaching managers new methods in employee relations, productivity, marketing, organization, communications — all the "nuts and bolts" aspects of management.

After I came back to the States, Chris Rutkowski called me, told me all about his plans for Rising Star, and asked me if I would come on board as Vice President. I was so excited about the plans and prospects for the company that I offered to come in any capacity, including janitor.

Actually there were only three of us at first, founders Chris Rutkowski, Roger Amidon and me. I did all the office work, including sweeping the floor. Later, as our staff grew to over fifty people, I was able to concentrate on the administrative aspects of the business.

In July of 1984 I became President, which left Chris and Roger free to direct the programmers in writing the software. My rapid rise from "janitor" to president is still something of a company legend. We get a lot of applicants for the janitor job.

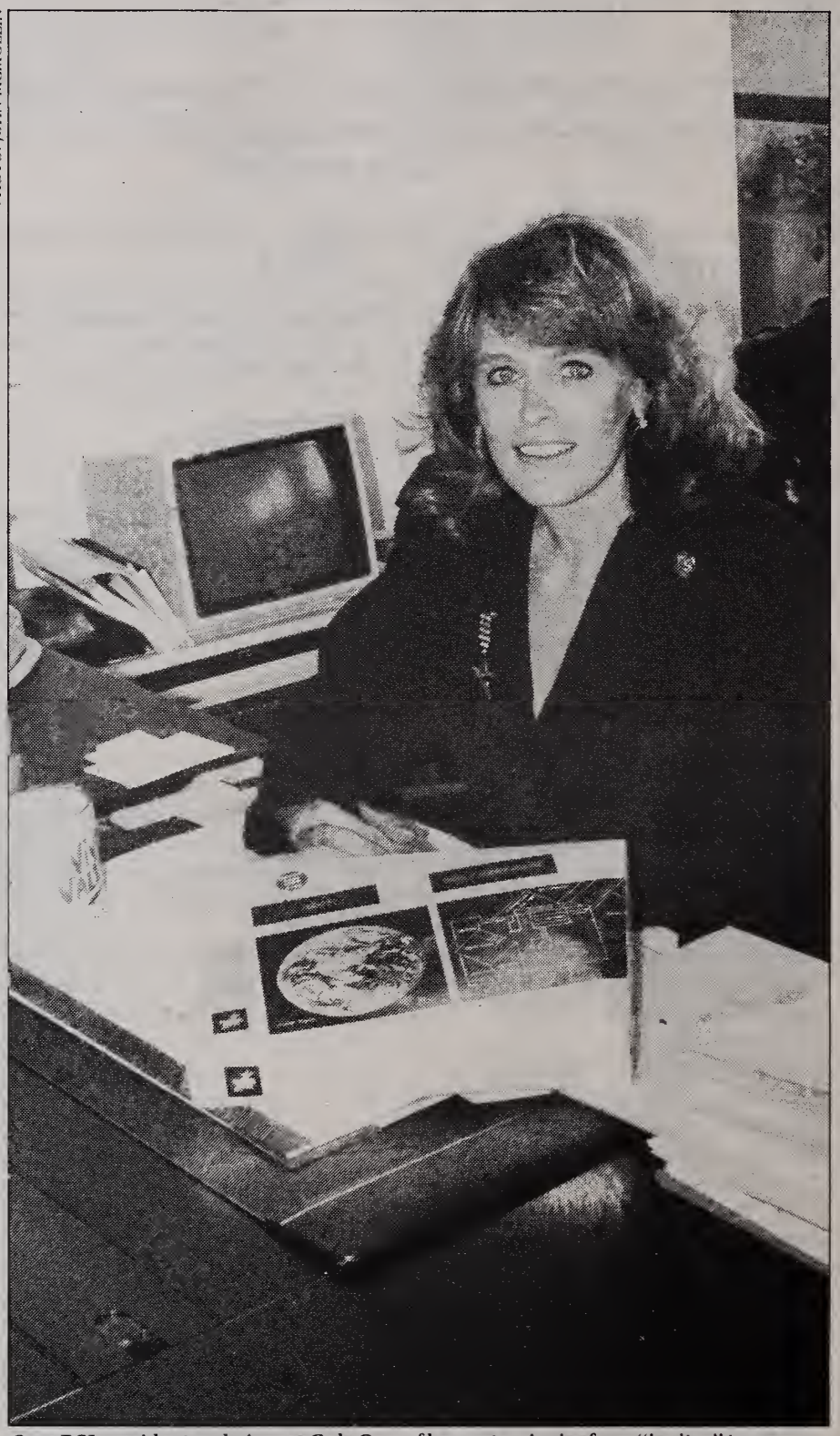
**You are the only woman Chief Executive Officer of a major computer firm that I know of. Does being a woman in "a man's job" create any special problems?**

Not for me. Maybe it created problems for others that were never addressed to me. Why should it be a problem?

**Do you feel that the computer-related industries offer good career prospects for other young women professionals who want to "get to the top"?**

Of course. The computer industry is a young, dynamic industry with lots of opportunity for able young managers. Perhaps because the industry and its leaders are young, they are more apt than older organizations to accept women as managers.

PHOTO: JOHN MCMULLIN



Says RSI president and pioneer Gale Carr of her meteoric rise from "janitor" to president: "We still get a lot of applicants for the janitor job."

**"Our founder Chris Rutkowski's philosophy is that software should be designed to enable the user to accomplish the task at hand, and to do so with a minimum of computer manipulation."**

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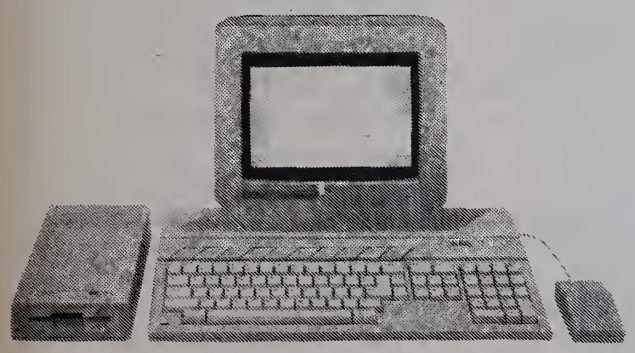

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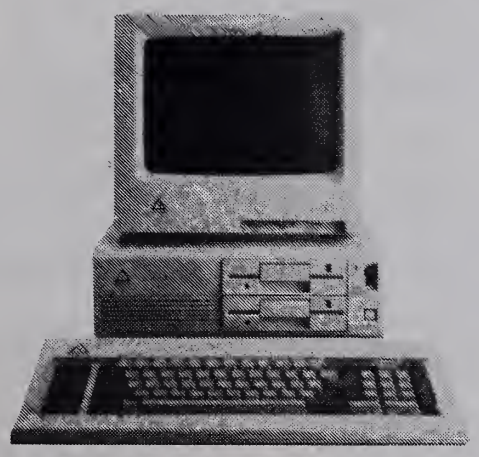

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**RSI's technicians staff the hotline, providing support for users of all RSI software.**

Actually I never chose a career in the computer industry; Rising Star chose me and it worked out. I think my administrative skills would have worked equally well in other industries.

**Has your lack of a technical background been a problem in a high-technology industry?**

When I first joined Rising Star in 1982 I took care of the office while Chris and Roger created the software. Over the years as my responsibilities grew I have acquired an adequate background in computer technology, at least as it applies to Rising Star products. I am computer literate and, as you see, I have my own computer.

**Most RSI programmers work in their homes, some of them quite far from Torrance. Do you think that computers with modems may extend this "cottage industry" mode of operation to other types of business?**

All of our 35 or so programmers do work at remote locations and are tied in to us via modems. This has several advantages. They can work their own hours (some of which are very strange); they don't waste time commuting, and they can work without disturbances and interruptions. In general we find this to be a very productive type of operation.

There are problems of coordination of course. We hold design conferences in various field locations to try to coordinate activities, but there is some loss of productivity due to duplication of effort.

As for other industries, the news agencies have operated via line transmitted text for years. Field sales personnel have always done a lot of communication by wire with their headquarters and some now carry portable computers with them to transmit or receive data from their home office. Computers with modems may extend the cottage industry idea to other industries.

**Now that Epson has discontinued manufacture of the QX desktop computers and has turned its attention to IBM compatible computers, does Rising Star plan to continue to supply and update software for the QX computers now in service?**

A very definite yes. When our exclusive contract with Epson expired in April 1985, we had not yet completed our final version of *Valdocs* software. In September we issued — on our own a new version called *Valdocs+*. We have since issued two updates to *Valdocs+* and will keep updating it until we're satisfied that it's really finished, hopefully by summer of 1986. We are also providing technical service via our "hot line" (213-373-9127) to users of all versions of *Valdocs* and all of our other software.

We consider the 70,000 Epson QX users to be valuable customers, and we invite all of them who have not done so to contact Rising Star so that we can send them our magazine and news of our new releases. If they will just drop us a card at 25500 Hawthorne Blvd., Torrance, CA 90505, Rising Star Magazine and other data will be sent to them free.

**Aside from software for the Epson QX models, does Rising Star plan to introduce software for other types of computers?**

Again a very definite yes. Under a contract with Atari we have converted some modules of *Valdocs+* to run on the new Atari 520ST. The first module is now available directly from RSI and the other modules will follow in rapid succession. The expanded RAM and disk memory of the Atari accommodates the *Valdocs+* software even better than the Epson QX-10 did.

We are also planning software packages for other newly introduced computers. Rising Star software for IBM compatible computers is a possibility in the future.

**Does Rising Star plan to enter the market for music synthesizer software?**

Yes. We are already very much in the synthesizer software business. We recently introduced a new piece of software called *MIDI-Play* which enables the 520ST — with appropriate auxiliary equipment such as a keyboard and amplifier — to produce professional quality music. Music synthesis is an important part of our business plan.

**What features of Rising Star software do you feel will enable the company to survive and grow in a highly competitive marketplace?**

Partly it's the philosophy of our founder, Chris Rutkowski, that software should be designed to enable the user to accomplish the task at hand, and to do so with a minimum of computer manipulation. A writer with the Great American Novel in mind isn't interested in the niceties of data processing. He has a story to tell, and he wants to get it on paper with a minimum of technical distractions. Our Editor module is designed to enable him to do just that, and it has been very popular with professional writers. Many of our users are unaware of and not interested in the advanced features of our editor.

Through our active customer service group Rising Star is much closer to our users and gets more feedback than other software producers. Some of our programs contain features that seemed mundane to our programmers, but when users asked for these features, we wrote them in. We don't write software to impress the industry or the reviewers, we write programs to fill our users' needs. Not surprisingly, our sales are expanding very rapidly.

**How is Rising Star coping with this rapid expansion into the areas of production and marketing, after its history of being almost strictly a research and development organization?**

In the near future we will be bringing on board three new vice presidents, each of whom will bring in-depth skills in disciplines such as Finance, Engineering, Marketing and Sales. These professionals will provide the leadership our core group of skilled programmers need to enable them to achieve their full potential.

Sure it's a tough marketplace out there where only the best can survive, but we at Rising Star intend to be the best. □

**"Some of our programs contain features that seemed mundane to our programmers, but when users asked for these features, we wrote them in. We don't write software to impress the industry or the reviewers, we write programs to fill our users' needs."**

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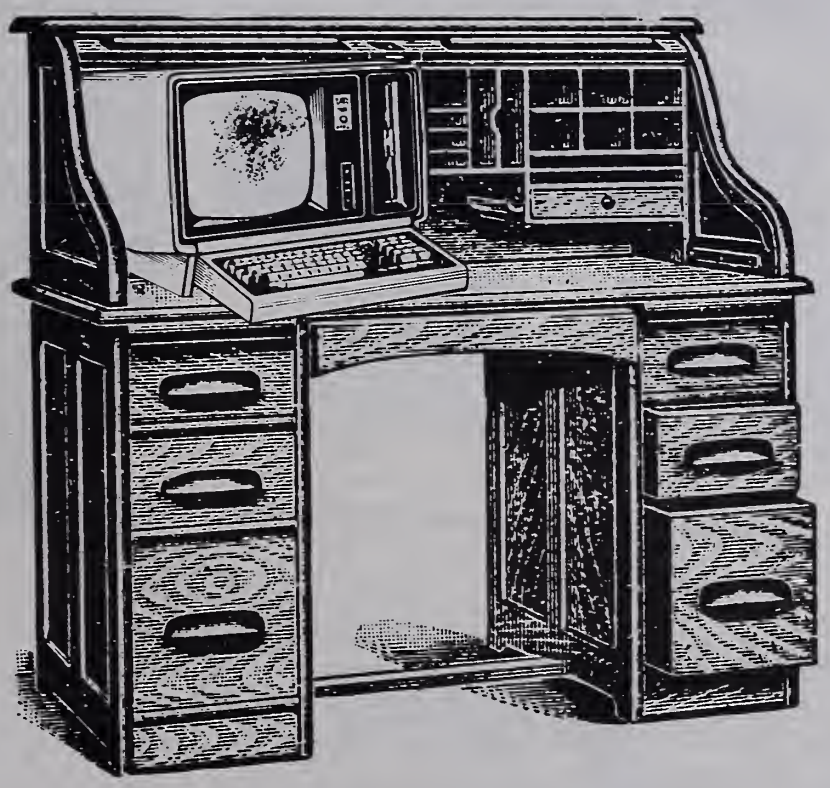

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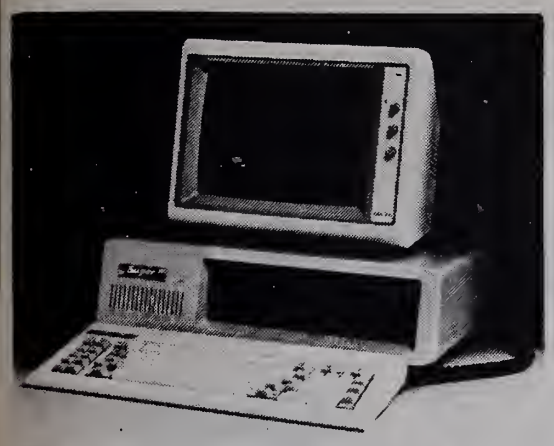

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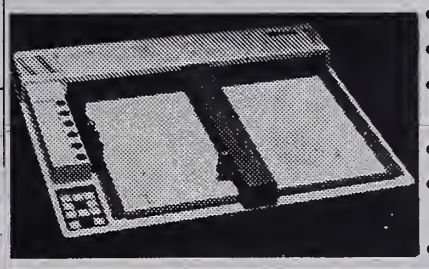

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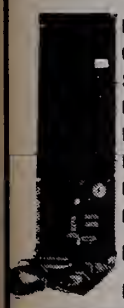

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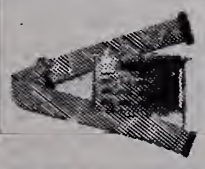

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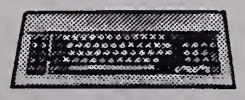

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# UNIX:
# Live Free Or Get Compatible

By Bennett Falk

**UNIX** is a cryptic, made-up, four-letter-word trademark name that each year —quite mysteriously—becomes more prominent in everyone's computer vocabulary, even though many otherwise-knowledgeable computer users are unsure whether it is an operating system, a programming language, or a religion.

Two years ago UNIX was widely rumored to be the "next big thing"—the successor to MS-DOS, the "standard" among multi-user operating systems. Last year it was the subject of a number of "what ever happened to" reminiscences, as though its time had come and gone and no one had noticed. The recent announcement that UNIX will be the chosen operating system of the IBM RT suggests that last year's UNIX obituaries may well have been premature.

## WHAT IS UNIX ANYWAY?

The by-now-standard answer is that UNIX is a multi-user, multi-tasking operating system whose development began in the late 1960s at Bell Laboratories. It originally ran on computers (PDP-7, PDP-11) made by Digital Equipment Corporation (DEC), which happened to be available at Bell Labs at the time. It was intended to provide an environment for software development and documentation.

Ordinarily, the m-words in that description are emphasized: multi-user, multi-tasking. UNIX was made to support many users working simultaneously on one computer, and it also allows a single user to do many things at once.

## SO WHAT MAKES UNIX SO SPECIAL??

UNIX is distinguished from just about everything else by two things: it is not tied to a specific brand of hardware, nor is it limited to a specific "application" like ticket selling.

Not surprisingly, there are historical reasons for the distinctive independence of UNIX. Remember that at the time UNIX was first developed, AT&T neither made nor marketed computers. The operating system was developed in response to two different sets of needs. One was the need to make the best use of the hardware at hand at the time: UNIX was a vehicle for Bell Labs to assert its autonomy from hardware suppliers. On the other hand, the Lab's employees needed an efficient and congenial way to get things done.

The independence of UNIX from both hardware brand name and from vertical applications is all the more striking given its complexity. UNIX today looks like the Swiss Army knife of operating systems because it was devised as a set of tools for the diverse needs of a community engaged in research and development. A full UNIX system will include well over 200 utilities to do everything from arithmetic to pattern matching in text files.

**The recent announcement that UNIX will be the chosen operating system of the IBM RT suggests that last year's UNIX obituaries may well have been premature.**

More important than the sheer volume of niceties UNIX offers, however, is its complex ideal of what an operating system should do. Most of us think of operating systems in terms of MS-DOS or CP/M. Those systems are essentially program loaders: you choose the program you want to run and tell MS-DOS. MS-DOS loads the program and relinquishes control of the computer to the application.

Under these systems, the management of hardware is left to the individual application: each program running under MS-DOS needs to be told individually (and usually by you) what the shape of the hardware environment is. The hardware requirements of applications are more or less independent of the operating system: *1-2-3*, for example, can address memory above 640K while DOS cannot. DOS will blissfully ignore any hardware accessories outside its capacities.

To be sure, UNIX loads users' programs, but it never gives the machine up entirely to the program being run. More than any other operating system, UNIX manages the hardware it runs on; it schedules all requests for hardware resources and contains within itself the necessary drivers and hardware configuration information for every application running.

The process of moving UNIX to a new computer is largely a matter of recompiling the operating system and describing the possible hardware configurations. The history of UNIX is largely the history of its being ported to new hardware environments.

## HISTORY, IDEOLOGY, ETC.

The porting odyssey began in the mid-1970s, when AT&T began to sell UNIX licenses to the world at large. With especially generous discounts on the licensing fees to educational institutions, the operating system was exported to hardware from many different manufacturers and began to invade the burgeoning minicomputer market.

During this time, the University of California at Berkeley became one of the centers of UNIX development. For some time now, UCB has produced its own releases of UNIX, identified with the "Berkeley Software Distribution" (BSD) label.

It is difficult to say how successful UNIX was as a product in the mid-1970s. Certainly the number and variety of machines running UNIX increased dramatically. However, while AT&T made it easy for educational institutions to get on the UNIX bandwagon, it was not so aggressive in courting the patronage of the business community.

In 1981, UNIX took a giant step into the commercial marketplace with the introduction of the first UNIX-driven super-micro computer, a bulky, desktop box from Onyx Systems running the Zilog Z8000 processor with UNIX from Interactive Systems. Other UNIX supermicros followed, and shortly UNIX had been ported to systems running the Motorola 68000, Intel 8086 and 80286 microprocessors.

With the availability of UNIX on super-micro computers, the price of a full-blown UNIX system dropped from hundreds of thousands of dollars to tens of thousands of dollars, with machines for as many as six users priced as low as $10,000. Indeed, in 1982 the per-user price/performance ratio of many UNIX-bearing super-micro computers was comparable to that of the Apple II.

The rush to bring UNIX products to market in the early 1980's brought with it a host of new names for UNIX. AT&T reserved the word "UNIX" for itself, forcing even the fully licensed versions of UNIX from other sources to reach the market with strange names like Venix, Ultrix, Xenix, and ZEUS. In addition, numerous UNIX "look-alikes" not licensed by AT&T came to market.

Also in 1981, IBM introduced its Personal Computer and in effect re-defined the criteria of success for small computer systems. There can be no question that the PC and its successors are winning the struggle for market share by offering moderately powerful computers backed by an awesome inventory of application software. The focus of UNIX development has been hardware independence, successfully moving the operating system to many different hardware environments, while the development of application software for UNIX systems has been healthy, it is not nearly so robust as the development of PC applications.

The PC market, by contrast, is founded on hardware uniformity, or as we so courteously say, "compatibility." The PC phenomenon argues that hardware independence is not worth much in the modern world. Proponents of UNIX argue that sooner or later the constraints of the PC package will become uncomfortably tight.

To date UNIX has been a startlingly successful piece of technology that has not yet hit its stride as a commercial product. Lacking the long-awaited, often-promised software bridge that would allow DOS and DOS applications to run in a UNIX environment, the commercial success of UNIX will hang on the outcome of an ideological struggle in which compatibility is pitted against independence. □

*Bennett Falk is an Application Specialist for BASIS, Inc., and has been enthralled by UNIX, its uses and users for the last four years.*

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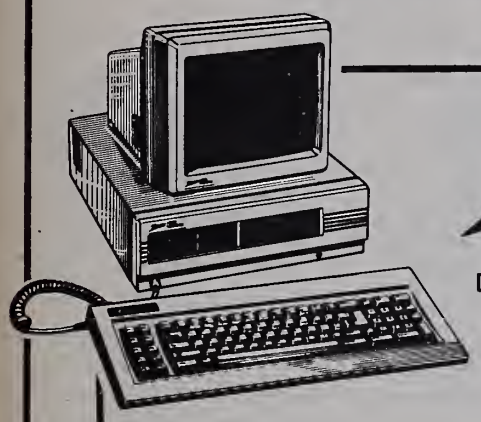

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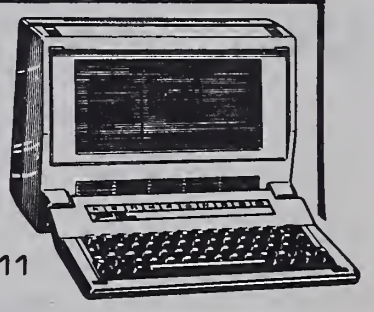

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# Your Basic Amiga Goodies

**By Matthew Leeds**
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Spring is here, and a young man's fancy turns to software. And hardware. Your basic goodies. The Amiga has been available for six months or so now, time to take a look at what's out there for it.

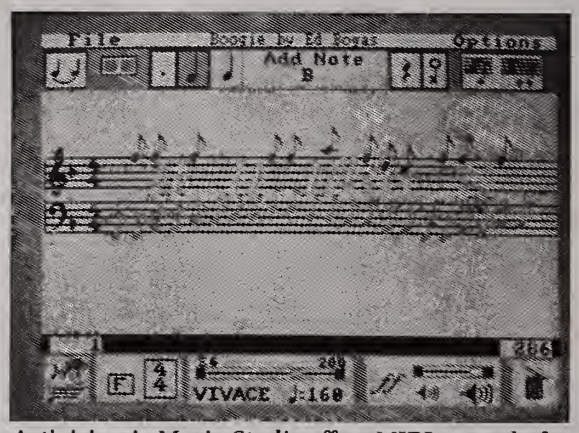
**Tons of games**—the best games ever seen on a micro, which is only to be expected, as the Amiga was designed originally to be a game machine. Electronic Arts has several winners, including *Dr. J And Larry Bird Go One-On-One*, *Archon*, and *Seven Cities Of Gold*. Activision has *Hacker* and *Borrowed Time*, to name a few. Mindscape has put an Amiga version of *Bratacas* in release—an odd combination of interesting graphics (Roger Dan) and an unusable user interface. Most of these games make use of the Amiga's stereo sound, extremely fast graphics, and large number of colors. Many also use the built in speech capabilities of the Amiga to simulate male and female characters.

**Paint, drawing, and animation programs:** Electronic Arts has *Deluxe Paint* and *Deluxe Video* currently available. *Deluxe Paint* has a very easy-to-use user interface, lots of power, and an early lead in the market. *Deluxe Video* will have remarkable implications in the home and industrial video marketplace—it makes the creation of scrolling titles, standalone point-of-purchase displays, instructional programs, and simple animations as easy as a point-and-shoot camera. It uses an interface of nested tracks of events, each controllable as a discrete event, for the assemblage of sound effects, text, pictures (backgrounds), objects (foregrounds), and animations. It's simpler to use than it is to describe.

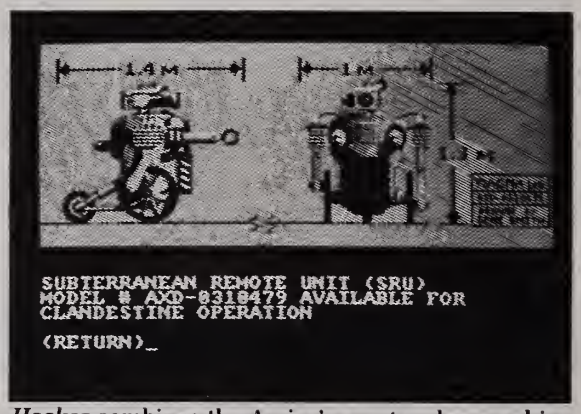
Aegis has released *Animator*, a metamorphic animation program. It uses the concept of "tweening": you mark the beginning and ending of an event, and the program does the work of calculating the movements between the endpoints. It's a great concept. You just point to where you want events to occur, and, using the mouse, show the computer what kind of events to create—moves, rotates, changes in size or shape or color, all done by example. Very powerful.

Included in *Animator*, and available separately, is *Images*, a paint program. All publishers have their own design philosophies when it comes to paint programs—what features to put in, how to access them, etc. *Images* has a different "flavor" from *DPaint*. It's got some features that *DPaint* lacks (patterned and gradient fills, dithering, pantographing), and a different user interface. It also runs under the Workbench. I think that many users will want both programs.

Not yet in release, but coming soon, is *Aegis Draw*, a CAD drawing program. I've seen demos of the program as it exists to date, and it will put *AutoCAD* to shame.




**Activisions's *Music Studio* offers MIDI control of synthesizers and keyboards, as well as an instrument sound design board screen.**




***Hacker* combines the Amiga's spectacular graphics with exercises in skulduggery.**

**Music programs:** *Music Studio* from Activision offers MIDI out control over keyboards and synths. It will control sixteen instruments, and has an instrument sound design board screen that will leave most Amiga-owning musicians with that itchy feeling in the wallet. *Musicraft* from Commodore has matured into a very respectable product. There are quite a few *Musicraft* scores available in public domain libraries in the Bay Area that show its full potential.

**Business software** has been slow in coming. *Textcraft* is still the only word processor available, and it's not a business-level product. There are no data base programs in release as yet, and I've not heard of any coming as yet (anyone out there know of any?). There are two spread sheets in release, *Unicalc* from Lattice, and *Analyze* from Micro Systems Software. *Analyze* compares favorably with *1-2-3* in most respects, but it is missing sort and macro functions (both being added to an upcoming revision).

Micro Systems also has two **telecommunications programs** in release: *On-Line*, a personal program, and *BBS*, a bulletin board program. There is also an excellent terminal program in the public domain called *AmigaTerm*.

Many Amiga users will never need to go beyond the Workbench user interface. For those who are interested in working directly with the **operating system**, I recommend two products. *Tychon Utilities* is a series of on-line help files, available from the Command Line Interface (CLI). You can install it on any Workbench disk, and get assistance on any of the AmigaDOS commands just by typing help "command." Very well thought out. The other product is the *AmigaDOS Manual*, published by Bantam Computer Books. This is the official Commodore/Amiga manual, and it is much easier to use than the early manuals as it is spiral bound and will lie flat and open. It combines the User's manual, the Developer's manual, and the Technical Reference manual.

If you're looking at **programming** on the Amiga, the machine comes with an excellent BASIC from Microsoft. The manual is now available and being shipped to all current owners of the machine. I highly recommend a program called *Conversation With A Computer* from Jenday Software. This is an excellent learning tool, as it is written entirely in BASIC and the source code is included. The manual is well thought out and easy to follow. The package consists of an interactive speech program and three games. Each uses color graphics, sound effects, and special screen displays. Permission is given to use any of the program modules in your own applications, but as this is a commercial program, you should not copy the disk for others. The manual explains how each module functions; however, this is not a step-by-step tutorial in BASIC.

If you want to program in C, I recommend *Aztec C* from Manx Software. All of the developers I have spoken with are switching over to it from the Lattice product. *Aztec C* is bug free, compiles faster, produces smaller code, and runs faster. Enough said.

There are a lot of **hardware peripherals** being produced. A Squared has created the Amiga LIVE!, a video digitizer. At least two other manufacturers have also produced digitizers: DigiView from Solid State Instruments, and an as-yet-unnamed product from the Computer Support Group. They are also producing two stereo digitizers in the under-$50 range. Computer Tech has announced the upcoming release of an IBM dual drive system for the Amiga, priced at $495, in support of the MS-DOS emulation software.

For the true hardware hacker, Computer System Associates has released a 68020 board for the Amiga. It plugs right in to the 68000 slot on the motherboard inside the Amiga, and versions are available with the 68881 math co-processor and 512K of static RAM. Talk about turbo.

Last but not least, the **Amiga Goes To Hollywood**. Negotiations have been completed for the Amiga to have a supporting role on episodes of **Miami Vice**, where it will be used as a "mug shot" computer. The Amiga will also have a starring role in *Star Trek IV*. It will be used wherever a computer display is needed in the production. □

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*Matthew Leeds is a writer/photographer specializing in high technology. He has been involved with Commodore computers since 1983, and co-produced the Commodore Show in San Francisco. This column represents the observations and opinions of Matthew Leeds, not necessarily the views of* MicroTimes.

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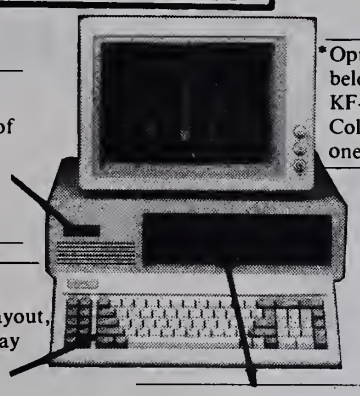

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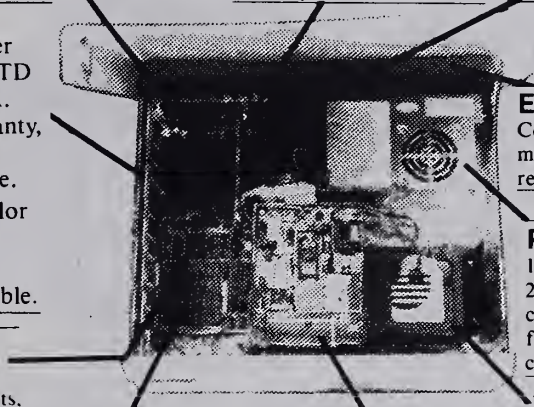

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## *Business Simulations For The Mac*

**By Barbara Leone**

Have you been wondering about investor's simulation games? What? You know, the ones called *Millionaire*, *Tycoon*, and *Baron*, offered by Blue Chip Software. Maybe you've been wondering if there's anything to be learned from them, or if they're just good fun.

First of all, I think it would be helpful to define the usefulness of simulation games in general. Or, what is a simulation game? A simulation game is one that re-enacts some aspect of life. My personal opinion is that games are supposed to be fun; after you've said that, though, you must recognize the fact that no two people have exactly the same definition of fun, and that some people are going to become simulation fiends while their friends wonder what all the fuss is about. The way I see it, someone who would enjoy Blue Chip's games would be among those interested in playing financial games without really losing. Chances are that if you like *Monopoly*, you'll like these games.

However, with due respect to Parker Bros., there's considerably more of genuine substance and educational value in the Blue Chip games. As I got further into *Tycoon*, *Millionaire* et al., it occurred to me that there really was some learning potential in these games.

One of the great things about these games is that you can experience making numerous investments and losing mind-boggling quantities of money without really losing. Each of the games provides the player with a realistic set of situations.

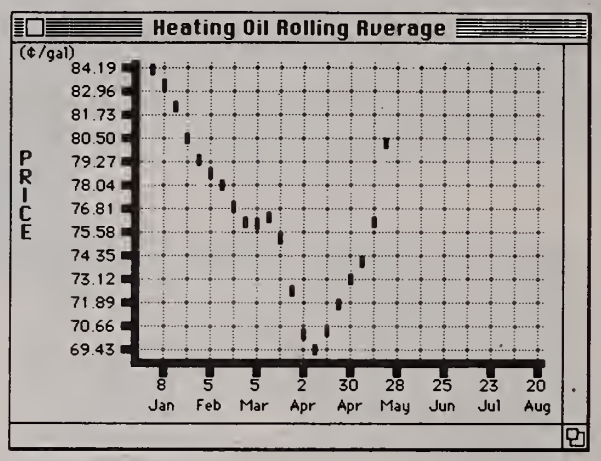
I particularly like *Tycoon*, The Commodity Market Simulation. With *Tycoon* I was able to acquire a basic understanding of the commodity market. *Tycoon* allows for the trading of 15 different commodities with a spectrum comparable to those traded in real life. For example, with *Tycoon* you can buy and sell not only pork bellies and soybeans, but gold, silver, wheat, foreign currency, T-Bills and more. The manual is very good about outlining how the commodities market works and involving the players in making it work. Illustrative examples are given to describe the situations occurring in the market; the player does not have to have any experience with the stock market to learn how to play this game. So as not to confuse the player, the manual carefully points out differences in the way *Tycoon* is played as opposed to how the same events would take place in real life. For example, in real life you can buy futures contracts with delivery dates as short as two weeks, or as long as a year and a half, from the time of purchase; however, as the manual explains, the *Tycoon* delivery dates allow for a maximum interval of one year, with the months always set at March, June, September, or December. In the real life commodity market, if you overlooked offsetting your position and the month passes you by, you could end up having to take receipt of the commodity or be responsible for delivering it. However, *Tycoon* does not deliver such crushing blows. Your futures contract will be sold for 90 cents on the dollar if you forget to sell your position.

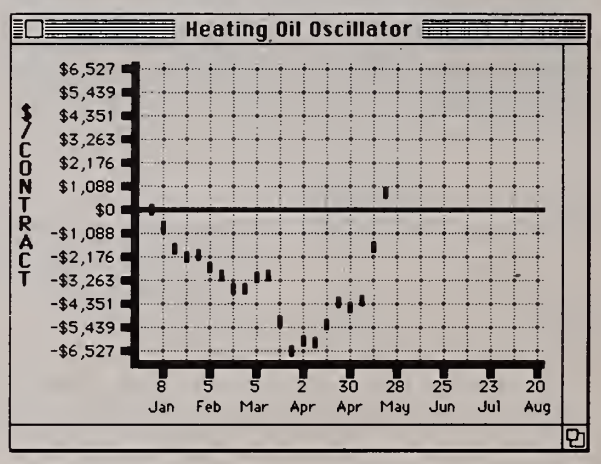
*Baron*: The Real Estate Simulation and *Millionaire*: The Stock Market Simulation were also informative and fun in their own ways. *Baron* allows you to dabble with real estate investment, buying and selling all over the country. It is all very realistic. The mortgage and property appreciation rates are based on a historical model of the real estate market.

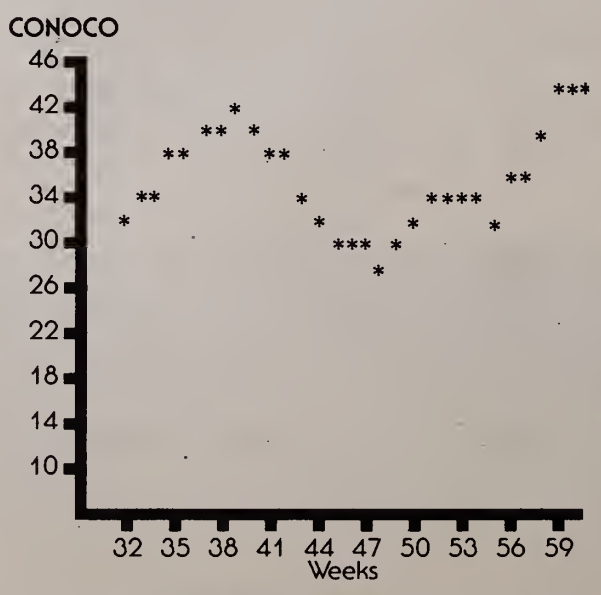
*Millionaire* simulates the real world of stock market investing. Each game presents the player with a new stock market environment, never the same, just as in real life. As with the other games, the manual gives a short course on how the stock market works. It even goes into an explanation of the thought processes that influence the decision of an investor.

Another package, *Squire*, is a financial planning simulation. To quote the manual; "Squire is unique among computer games because, in addition to the basic game itself, it lets you 'play' your own personal game of life—with real life goals and a game plan you devise." The basic game starts out with a scenario in which the player's age is 35, with a goal of retirement at 55 years of age. The game sets seven interim goals, such as sending children to college or planning an extended vacation. *Squire* also has a "Reality Mode" whereby the players are able to set up their own current data, such as present age and current assets, to get a sense of where they are headed in their financial future.

Blue Chip Software is located at 6740 Eton Ave. Canoga Park, CA 91303. Their telephone number is (818) 346-0730. If you'd like more information on any of the games, I would suggest calling them. I am sure they would welcome your interest. □




**Blue Chip's Tycoon and Millionaire simulations let the fledgling trader cavort around the commodities and stock markets without dire consequences.**

---

*Barbara Leone owns and operates Microsource Consulting Services in Orinda, California. She works with all sizes of businesses, training and consulting on the Macintosh and IBM personal computers. For more information call: (415) 254-4999.*

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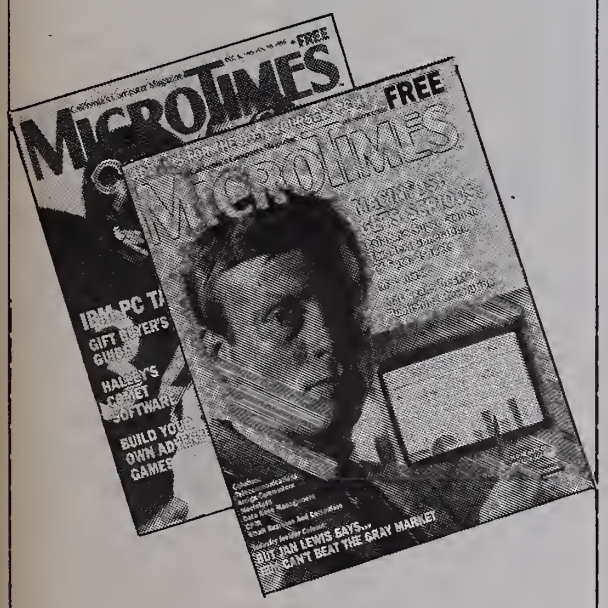


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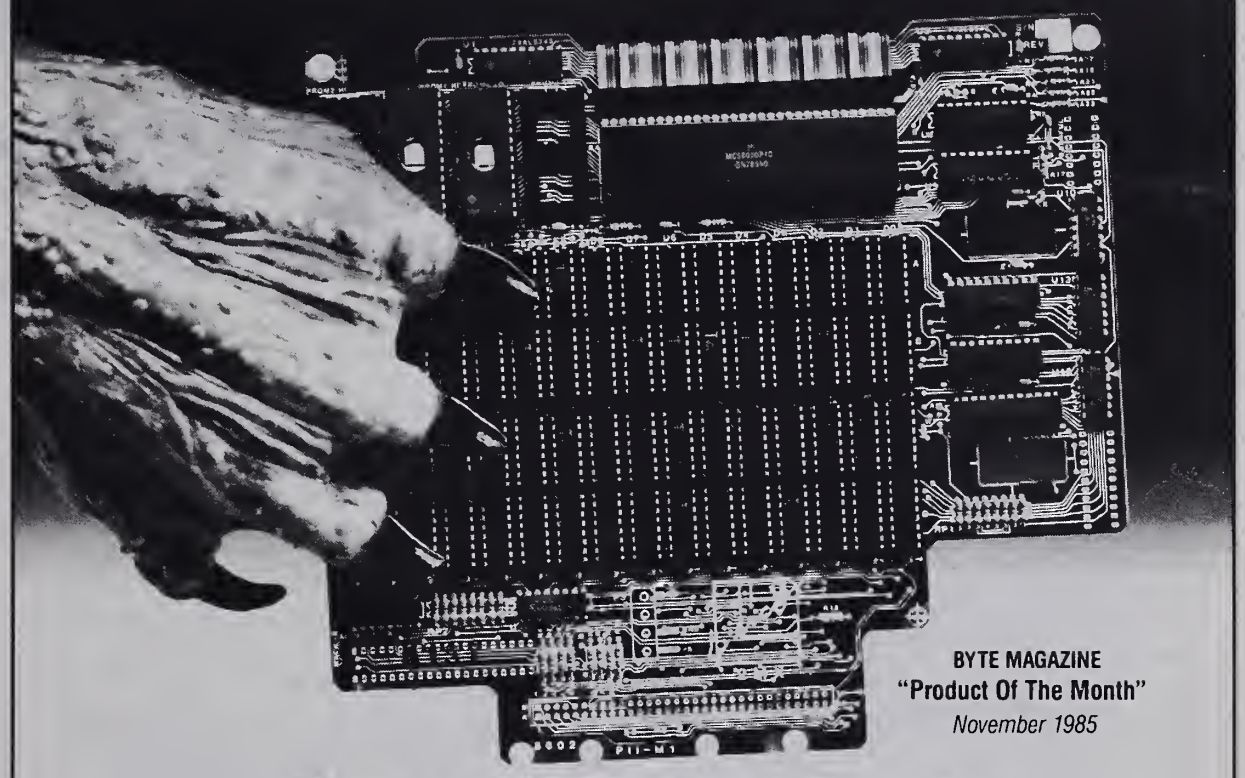

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# Designing For Users: Not A Pure Science

By L. K. Engelhart

Business people have conferred exalted status on computers and the people who make them work; system designers have responded by giving customers what they ask for rather than what is good for them. This often develops into a no-win stiuation, with mutual recrimination.

There has been much emphasis lately on the benefits of paying attention to the customer, but it's not always clear what that means. In *In Search Of Excellence*, Peters and Waterman suggest that loving your customers does not mean prescribing for them from an "analytical ivory tower." Other recent research suggests that the usefulness of design depends on two things: designers' assumptions about users and about themselves, and certain principles of design that must be followed.

## DESIGNERS' ASSUMPTIONS ABOUT USERS

A designer who says "You tell us what you need and we'll design the system" is abdicating responsibility. When the user cannot articulate his needs, this designer will proceed to create a system as he "thinks" it is needed—straight out of the ivory tower.

On the other hand, the belief that the user's stated requirements can be accepted without examination is naive. Designing systems based on such requirements asks for the user, not the designer, to design the system; the resulting system will reflect the design skills of the user, not a designer.

**A designer who says "You tell us what you need and we'll design the system" is abdicating responsibility.**

When our experience with our users is limited, we may not be aware of the significant differences between them. Moreover, we may make unfounded assumptions. Our design decisions will always be ill-advised; some significant factors will always be missed.

While it may be true that we cannot identify *all* problems, we can certainly find some of them. In fact, the problems we find in a small survey of real users will be more apt to be the serious ones, and the problems we don't find will be less serious.

We can make no assumptions about our users. No matter what we think we know about them, there is no substitute for getting out there and communicating with them.

## DESIGNERS' ASSUMPTIONS ABOUT THEMSELVES

When it isn't practical to communicate directly with people like those who will eventually be using our system, we may be tempted to abandon our responsibility to do so. Some designers seem to believe that, when an essential part of our job seems impossible, we need not do it.

**We can make no assumptions about our users. No matter what we think we know about them, there is no substitute for getting out there and communicating with them.**

We're tempted to treat systems design as an exact science. The history of science has taught us that research and development are done best in the controlled environment of the laboratory. We are taught to logically examine a problem, design a theoretical solution to it and test that solution until the design is dependable enough to implement in some practical way. We avoid environments with uncontrolled variables—personal idiosyncrasies, office politics and cultural differences.

We assume that, given a clear set of abstract requirements, we can produce a technology-oriented design that meets those requirements. When we have the opinions of the experts, what more do we need? After all, users should be expected to adapt themselves to what we know is the best way to do something...

The only problem with this is that human behavior is not absolutely predictable in most normal work environments.

**Good system design demands both discipline and creativity. You might say it's an art.**

Designers have a few other sometimes-fallacious ideas:

- Getting the product on the street is the highest priority.
- Advanced technology will always prevail.
- High usability is prohibitively expensive.

Many of these assumptions are very reasonable and ultimately practical, but they also dictate an approach to designing systems which has an adverse effect on the system's usability.

## FUNDAMENTAL PRINCIPLES OF SYSTEM DESIGN

Good system design demands both discipline and creativity. System design is not a pure science—it involves elements of psychology, physiology, sociology, engineering and politics. To say nothing of ethics and aesthetics. You might say system design is an art.

It's just common sense that certain things would be considered in system design. Most modern designers think these factors should be considered:

- How the user interacts with the system.
- How the user has done the job in the past.
- What the user expects the system to do.
- What are the user's physical capabilities.
- What the user thinks of the system.
- How the system improves the user's performance.

These considerations, combined with a set of utility-oriented assumptions in system design, lead us to a simple trio of fundamentals:

- Initial design results directly from user contribution.
- Implementable design results from testing user reactions.
- Usable design results from many iterations of implementable design.

All applications must be simple, they must be useful, and they must be easy to learn. Nobody but the user can show you whether an application has these elements. □

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# Telecomm Grows Up

## *Online Detente, Government Snoops, And The Police Blotter*

**By Brock N. Meeks**

One day, imbibing at the home of artist Sir Joshua Reynolds, Dr. Samuel Johnson pontificated: "Claret for boys, port for men, and brandy for heroes." Overhearing Johnson, Edmund Burke, the politician, said, "Give me claret, for I would love to be a boy and return to the careless gaiety of my youth."

Not unlike Burke, I sometimes long for the carefree nights of my first online exploits. A modem, a list of bulletin boards twice as long as my arm, and a dimly lit room in the middle of the night. Going online five years ago (which now seems like an eternity) entailed nothing more than trading phosphor philosophies with the local BBS crowd, much like quaffing a few beers with the locals at the corner pub.

As an outspoken advocate of this medium, I plead guilty to over-selling (some would say, hyping) the technology of microtelecommunications.

Well, folks, the honeymoon is over.

This industry is growing up with all the anguish of adolescence, all the heartaches of a teenage love affair. As we endure these growing pains we are witness to many encouraging (and discouraging) developments. Including these.

### ONLINE DETENTE

Joel Schatz sat in his apartment in November of 1984 fingering his most recent purchase: a Radio Shack Model 100 laptop computer. In a moment of inspiration Schatz, director of special projects for the non-profit Ark Communications Institute, decided to send a telex to Moscow. Logging on to Western Union's Easylink electronic mail service, he sent the telex to Yevgeny Velikhov, vice president of the Soviet Academy of Sciences. Schatz proposed an ongoing dialog, via computer conferencing. As that telex stated: "We've tried competition, threats, bringing the world to the brink of global suicide. So why not try friendship and cooperation? The time is right on both sides."

And indeed it was.

On October 24th, 1985, the final bureaucratic obstacle to the start of electronic communications between the two countries was overcome. Since that time a dozen U.S. and Soviet scientists have communicated daily in an informal conference on the New York Institute of Technology's Electronic Information Exchange System (EIES). To date no formal approval has been given. This past March, however, planners said they saw no roadblocks ahead for formal approval of this information-age, tiny version of the Geneva talks. Electronic detente.

Only the Kremlin needs to approve the final plan. Associated Press writer Frank Bajak quotes U.S. scientist Murray Turoff: "The Russians seem to think it would be a good way for people who are working together to communicate on a regular basis." Turoff, co-author of the Network Nation and principal developer of EIES, was a member of a recent U.S. delegation that went to Moscow to complete the plans for the exchange.

University of Pennsylvania professor George Gerbner, director of the U.S. delegation, said, "What we're dealing with is a research and cultural exchange agreement that is much broader than the idea of computer networking." Gerbner, notes Bajak, says the link would "break new cooperative ground in research into such areas as joint television programming, comparative media studies and the impact of television on children."

**For every police blotter story, every press release about government prying into electronic communications, there are two stories about pioneers stretching this medium to new and admirable heights.**

### FOSTER GRANTS, AN UZI, AND A 1200 BAUD MODEM

The Secret Service will forever be remembered as the dashing young men, in three-piece Brooks Brothers suits and mirrored Foster Grant sunglasses, who unleashed an arsenal in full view of a prime time TV audience two seconds after President Reagan was shot.

In that light, it might come as a shock to the average computer fraud artist (worm, pirate, hacker, ad nauseam) to find that the Secret Service is on his or her case.

According to bureau spokesman Jack Taylor, the Secret Service, a branch of the Treasury Department, is becoming more active in investigating computer crime. Until now, only the FBI dealt with computer crime on a federal level, most often in cases of computer crime that involve other federal crimes, such as espionage or organized crime.

CompuServe's Online Today reports that in cases involving the abuse of access instruments," such as credit cards, the responsibility falls on the Secret Service under legislation that took effect last year (the 1984 computer crime bill).

"We've been involved in fraud cases involving access devices like credit card numbers for some time, but before that bill passed, there was not a definite line drawn," Taylor told Online Today's J.S. Orr.

Without a clear line of authority, Taylor added, many cases fell between the cracks and were "often left to local prosecutors where there should have been federal charges."

The Secret Service hasn't been in the computer crime fighting business long enough to give an estimate about its success rate. By the end of 1986, however, it expects to release a full report on the project.

### ONLINE DRIVER'S LICENSE REVOKED

In these days of WarGames "copy-cat" computer crashers and laws mired in various shades of grey, some judicial systems are taking the creative approach to punishment.

In Emporia, Kansas, a 16-year-old pleaded guilty to using his computer to steal long-distance calls worth more than $2,000. The judge hearing the case ordered the youth to do a little free programming for the Emporia Police Department as part of his settlement.

The teenager was first tried by juvenile authorities in January on 106 misdemeanor charges of unlawful computer access, calls made in December on a long-distance telephone service called Valu-Line.

According to the Associated Press, the phone phreak was sentenced to make restitution of $2,035 and "write a program for the police department property room inventory."

In addition, the court prohibited him from using a modem for the next year. (Let's hope the police don't let him into their mainframe...)

### THE GOOD, THE BAD, AND THE...

Rest of us. By now most of you online veterans know that this online wonderland we work and play in is rife with problems and inconsistencies. It is a medium barely reined in. Like walking six big dogs down the street on separate leashes—it's just on the edge of control.

It is comforting to know, however, that for every police blotter story, every press release about government prying into electronic communications, there are two stories about pioneers stretching this medium to new and admirable heights.

And so it goes.

Somewhere, another Joel Schatz. Sitting with a modem, a list of bulletin boards twice as long as his arm, in a dimly lit room in the middle of the night. □

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*Brock Meeks is a San Diego-based freelance writer. He was last seen at his keyboard sans mirrored Foster Grants.*

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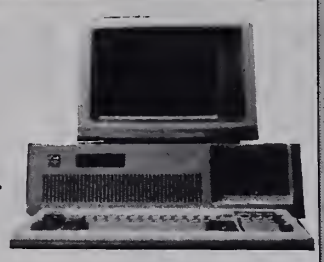

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# Getting Acquainted With Your CP/M Machine

By Robert D. Athey Jr.
© 1986

We've already pointed out that you're in charge when you go computer shopping. It's equally important to realize that you're in charge of the computer once you get it home. For the beginner, a myriad of little signs are essentially messages on how to use the program or computer.

When you turn on the computer, nothing much happens except a humming sound. Eventually, the screen lights up. Depending upon which type of computer you bought, you'll either see a message on the screen (saying "put your disk in drive A") or a simple flashing hyphen up in the top left corner of the screen. The humming is the disk drives rotating and looking for a disk. Put in a disk, and close the door on the disk drive—it is also the switch that lets the disk drive close like a clam shell on the disk, start it rotating and read it.

When the disk is readable, you'll then get an ">A" in the upper left corner of the screen. This is called the PROMPT, telling you the computer is ready for you to type in instructions from the keyboard. Any time you see that prompt as the lowest or last line on the screen, it is telling you it is ready for another instruction. If you don't see that prompt, the computer is still working on your last instruction, even if the screen is blank.

A blank screen usually means the computer is off doing something else, but occasionally the software is kind enough to tell you what the computer is doing by flashing a message on the screen—"swapping..." or "loading PROGRAM XYZ...," for instance.

So, now you've "booted" the computer, or given it the necessary information for it to boot itself. The computer has a small ROM (Read Only Memory) chip with just a few instructions on it—a non-volatile memory that remains even with the current turned off. The ROM has a start-up instruction set, e.g. "turn on the CRT," "start the disk drives," "read the first ## of tracks on the disk in A drive," and so on. When you turn on that power switch, the ROM runs through its set of instructions and turns control over to the RAM (Random Access Memory) for whatever instructions are in the first few tracks of the disk.

There are two kinds of booting procedures. A "cold boot" occurs when you have just turned on the computer, or hit the reset switch. A "warm boot" is a restart you initiate whenever you type in a **<CONTROL>C** from the keyboard. In each case, the computer starts up the ROM procedure, spinning the disk and reading the first few tracks. The most significant difference is that the cold boots always put you in screen with the tracks in drive A because the RAM was erased, while warm boots transfer control (after reading the drive A tracks) to whatever drive you were using—because the RAM was not erased.

Now you want to start to work. I always type in "**DIR**" next, just to see if the file I wanted is on the disk I booted. **DIR** is one of the five main commands resident in the "system tracks" in the CP/M disks. It calls up a directory of the disk you are currently logged onto (A drive, in this case). The other commands are:

- **REN** = rename a program;
- **ERA** = erase a program;
- **TYPE** = prints a file to the screen for reading; and
- **SAVE** = stores the contents of memory (RAM) to a file.

These commands are stored in a section of the disk not seen by any directory call; they are put on the disk when you **SYSGEN** it. **SYSGEN** means system generation, but it's really just laying down a few tracks at the beginning of the disk with the booting instructions needed after the ROM is finished, and the resident five command set.

You probably get many disks when you buy the computer, some with programs on them, some empty. Blank disks will not boot because they haven't been **SYSGEN**ed, but certainly the System Disk has. The System Disk has many programs called "utilities"—useful in performing operations on files (such as moving, copying,...) or disks (such as formatting, copying, and **SYSGEN**.

You've now booted with the system disk, and you want to get started with your work. The first thing you want to do is format your new blank disks. The need to format is related to the design of your computer. Each computer company chooses to use a particular way of laying down the disk memory tracks in the oxide layer on the plastic disk for its own reasons—from ease of their calculations to a requirement for a certain information density. The computer will magnetize a set of circular tracks, one outside another, and divide each set of tracks into sectors (a mathematical name for pie shaped wedges). The computer will look only in these locations for information, and will go haywire if the tracks are a little off.

Depending on how up to date your system disk is, the command to use may be **FORMAT** or **COPY**. In either case, put the new disk in drive B, and call up the program needed, remembering that you'll wipe out anything resident on those disks with the formatting routine. Some system disks have the option of **SYSGEN**ing while formatting, and some have to do it separately. In either case, these programs must be called up by typing in **FORMAT, COPY** or **SYSGEN**. The programs have instructions that come on screen, telling you which key to hit next, and what to do with the disk.

When you call up the **DIR** command, you see a lot of programs listed, but their names didn't look familiar. The files and programs in a computer have names, which computer writers generalize by using the generic **FILENAME**. The programs may generally have a **FILENAME** of up to eight letters, numbers and characters. Some computers do not allow some characters (i.e. MS-DOS systems will not read a "+" or a "–" in a **FILENAME**), but CP/M is quite liberal in that respect.

But that's not all on naming files or programs. After that eight letters of **FILENAME**, there's a period(".") and three more letters. Those last three letters are called the "extent," and they are one of your most important sources of information. Let's show what the common extents are and their meanings as accepted in usual practice.

1. **COM** = compiled file, meaning you can call it up and have it work instantly just by typing in the **FILENAME** without the period or the extent (these are **EXE** extents in MS-DOS, too);
2. **OBJ** = a machine language file that will work like a **COM** file when the extent is changed to **COM**;
3. **BAS** = a program needing a compiler for BASIC language (to call these up, you type in "**BASIC FILENAME**" using the name of whatever BASIC compiler came with your machine.);
4. **PAS** = a program needing a compiler for PASCAL language; and
5. **DOC** or **NOT** = a text file you can see or use by the **TYPE** command from the CP/M command set we showed earlier (or other word processing technique) to see what FILENAME is and does. (Remember the CP/M **TYPE** command only lets you view the file on the screen.)

There are many other common extents used; you are not limited to just these. You can name any file with any three letters or numbers as the extent. □

---

*Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contract research. He can be reached through MicroTimes or at (415) 526-3541.*

## HARDWARE AND PERIPHERALS

# LASER 128

**Manufactured by:** *Video Technology*
**Suggested Retail:** *$395*
**Reviewed by:** *Mike Markowitz*

From the British Crown Colony of Hong Kong, the last bastion of unrestricted free enterprise, comes the Laser 128, a new Apple clone with some impressive specs. The bare-bones price of $395 is likely to win over a lot of skeptical users.

The machine closely resembles the trendy little Apple IIc, but it has a better keyboard, a built-in parallel printer port and one side-mounted expansion slot, which will accept most Apple-compatible cards, including a CP/M card (a generic Z80 card is offered for only $30 extra). An adapter to expand the single slot into two slots will reportedly be offered soon. One disk drive is built into the case, and a port for attaching a second drive is provided.

There is a serial printer port (ImageWriter-compatible) a serial modem port, and a mouse port. Standard video and RGB color monitors are supported. The Laser 128 will also work with the abominable Apple flat-panel LCD display, if you want to go blind trying to read it. The system takes an external 15 volt power supply, just like the IIc. There is an earphone jack, and a volume control knob for the speaker.

A one megabyte memory expansion card is planned for Summer 1986 release (no price information yet). By that time, an increasing number of new Apple programs should be able to use that huge chunk of memory for something other than a RAM-disk. No existing memory cards are compatible with the Laser 128, unfortunately. The machine is compatible with the popular Sider hard disk.

The 32K ROM includes Microsoft Basic, which is functionally identical to Applesoft. The machine has been tested with all the popular software, including *Appleworks*, ProDOS 1.1.1, *Dazzle Draw*, *Flight Simulator*, *Newsroom*, *Print Shop* and the *PFS* series. The only programs that would not run were some early Brøderbund games (*Choplifter*, *Serpentine*, *David's Midnight Magic*) that made extensive ROM checks as part of their copy protection scheme. Any future ROM enhancements will be made available to customers for a $25 update fee. The ROM chips are accessible without opening up the computer. Unlike the IIc and enhanced IIe, the Laser 128 supports the full ASCII character set, as well as the new "mousetext" characters.

The keyboard includes a numeric keypad, cursor control keys, and a row of ten function keys (unknown in the Apple world, but supported by some CP/M software). The "open-Apple" and "closed-Apple" keys are replaced by little open and solid triangle symbols. Like the IIc, the Laser has a switch to select the QWERTY or Dvorak keyboard arrangement.

The machine is manufactured in Hong Kong by Video Technology, a heavyweight in home electronics. The company also makes the Laser 3000, a less capable, more expensive Apple II+ clone that is currently under litigation for infringement of Apple's patents and copyrighted firmware. The Laser 128 reportedly does not violate any of Apple's rights, so it should be able to avoid the legal hassles that nearly killed the Franklin Computer Company (and that have caused many Far Eastern Apple clones to be seized and sledgehammered into scrap by U.S. Customs agents).

**The Laser 128 is an Apple IIc clone from Hong Kong that performs impressively and carries a substantially lower price tag.**

The 65C02 microprocessor is supported by a set of custom LSI chips developed for Video Technology. This should be a cool-running machine, with no need for an external fan. The standard of workmanship and finish is better than one would expect on a low-priced clone.

One U.S. distributor for the Laser 128 is Central Point Software, which is offering the computer bundled with the latest release of their Copy II+ backup utility. Central Point will support the system with an in-house repair center working on a board-swap basis (defective boards or sub-assemblies will be replaced). A range of cables, a $150 external drive, a modem and a monitor will be available from the same distributor. (Central Point Software, Inc. 9700 SW Capitol Highway, Suite 100, Portland, Oregon 97219-9990 [503] 244-5782.)

## GRAPHICS SOFTWARE

# Clip Art Collection

## Volume 1

## For use with *Newsroom*

**Published by:** *Springboard Software (1985)*
**For:** *IBM PC (version reviewed); Apple II version also available*
**List Price:** *$29.95*
**Reviewed by:** *Mike Markowitz*

*Newsroom* is a remarkable product. Designed as a sort of "simulation" of newspaper production for younger students, it has found wide application as a tool for low-end desktop publishing. Perhaps the program's greatest shortcoming is the user's inability to see an entire page layout before printing. But its great strength is its ability to mix text and graphics freely within a "panel." The graphics are contained on a disk of "clip art" pages that use an unusual, proprietary file structure. An individual image is selected from the page by moving a "hand" icon onto it, and (on IBM PC's and compatibles) pressing the "Alt" key. An image may be brought into the Photo Lab work area and modified with a wide range of graphic tools, such as lines, boxes, circles and fill patterns. Images may be superimposed and selectively erased to create startling or useful combinations.

To expand the original set of 600+ illustrations, Springboard has now released the first in a projected series of Clip Art Collections. The disk comes in the same beige plastic box as *Newsroom*, which gets my nomination for the best package design in the industry: attractive, sturdy, roomy and securely latched.

The graphics in the collection are organized into 93 "pages" by subject. Some subjects, like "Sports," may occupy as many as six pages. The subjects include aircraft, animals, fantasy figures, flowers, food, historical figures, kids, women, men, musical instruments, famous places, scenery, religious symbols, tools, and work. As a way of keeping up with *Print Shop*, this collection also offers a set of ornamental borders; however, these are not so easy to use as the ones in *Print Shop*, since the lines must be very carefully placed and may not always meet (you have to create an ornament of your own to fill the gap). A wonderful set of clocks is provided; the clocks have no hands, so you can draw in your own to indicate a particular time. Six pages of "fun" items can be used specifically to create cartoons. In general, the images in the collection are a mix of realistic and cartoon-style illustrations. The line weight is crisp, and the figures come in a variety of sizes (you cannot vary the size of an image, but you can crop it to fit your intended use in the Photo Lab). Since the designers had a full-screen image area to work with, the figures avoid much of the jaggy-line effect seen in much microcomputer artwork.

A page of "faces" provides an electronic version of the classic toy "Mr. Potato Head." A collection of eyes, ears, noses and mouths can be placed on any of four basic head shapes, and topped with any of five hats. This might not meet the requirements of a police artist, but it allows the user to create an enormous variety of faces.

Three pages of "Letters" provide a full set of illuminated large capitals, with vigorous curlicues extending right out of the frames. The "Miscellaneous" category provides a set of household appliances.

A sixteen-page booklet provides a visual index to the entire collection, and offers a number of tips and tricks for the experienced user, such as a way to create a negative reversal of an image (this was not obvious: I never would have figured out how to do it myself).

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## GRAPHICS SOFTWARE

My personal favorites in the collection are a large image of the Taj Mahal reflected in its pool, and a wistful winged horse from the "Fantasy" pages. There is also a very realistic, detailed picture of a PC, just waiting for the user to put some rude text on the screen.

Any heavy user of *Newsroom* will find plenty of ideas and resources in this new collection. Since *Newsroom* cannot import graphics from other programs, we are dependent on Springboard Software for fresh graphics. It is encouraging to see that the publisher is committed to supporting this product and enhancing it at reasonable cost. (Springboard Software, 7807 Creekridge Circle, Minneapoilis, MN 55435 [800] 328-1223.)

# Banner

**Published by:** *Custom Program House*
**For:** *CP/M, MS-DOS*
**Price:** *about $20*
**Reviewed by:** *Robert D. Athey Jr.*

Several graphics packages have a subroutine to allow the printing of banners. *Banner*, available for CP/M and MS-DOS *only* does banners, and incorporates a number of versatile features.

*Banner* allows you to tailor your banner for readability and take advantage of the whole sheet width of your printer for each letter—not a universal feature among print programs. *Banner* will fill up to 8" letter heights on standard printers, and up to 11" on 15" printers. The result is really readable banners for all occasions.

*Banner* allows you to choose the characters from which your letters will be constructed—a letter, a non-numerical keyboard character, or a number from 1 to 128 (256 is the upper limit if you transmit eight bits to your printer). This numerical choice requires that you know your printer's ASCII code equivalents well, as characters don't necessarily show up on the screen as they would on the banner. It takes some experiementation to find solid "color" characters suitable for the lettering. It would be a good idea to look in the printer manual to see if it is receiving 7- or 8-bit messages from the computer, since this is a key factor in finding the solid characters.

*Banner* has menus to guide you through design and printing. The menus allow choices of solid or inverse prints, compressed mode through strings of characters input from the menu, and many other control options.

The extensive on-disk documentation is easily and clearly understood from the beginning; easier access to a table of ASCII equivalents would be a helpful addition. All in all, this program is to be recommended—it will give you a great set of banners for your next party, game day, etc. (Custom Program House, P.O. Box 4710, Berkeley, CA 94704, (415) 652-8222.)

## BOOKS

# Siliconnections:

## Coming of Age in the Electronic Era

**By:** *Forrest M. Mims III*
**Published by:** *McGraw-Hill, New York (1986)*
**List Price:** *$16.95*
**Reviewed by:** *Mike Markowitz*

With many digressions, war stories and personal opinions, this is one insider's memoir of the origins of the personal computer. Like many of the pioneers on the Silicon Frontier, the author is a Texan, but not a scientist or engineer: after nearly flunking freshman algebra at Texas A&M in the early 60's, he switched his major to government.

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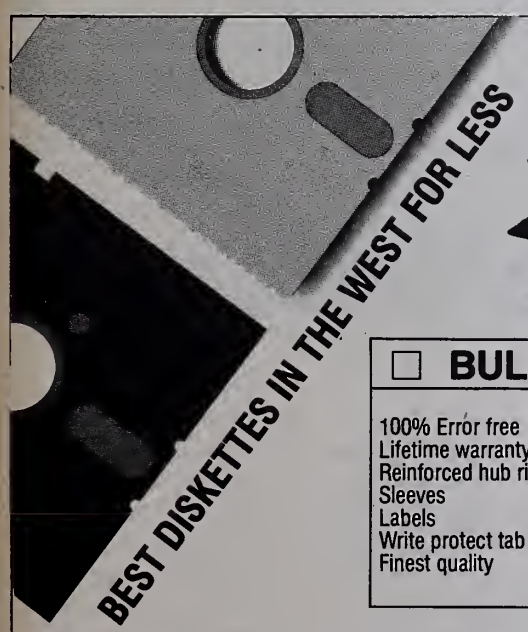


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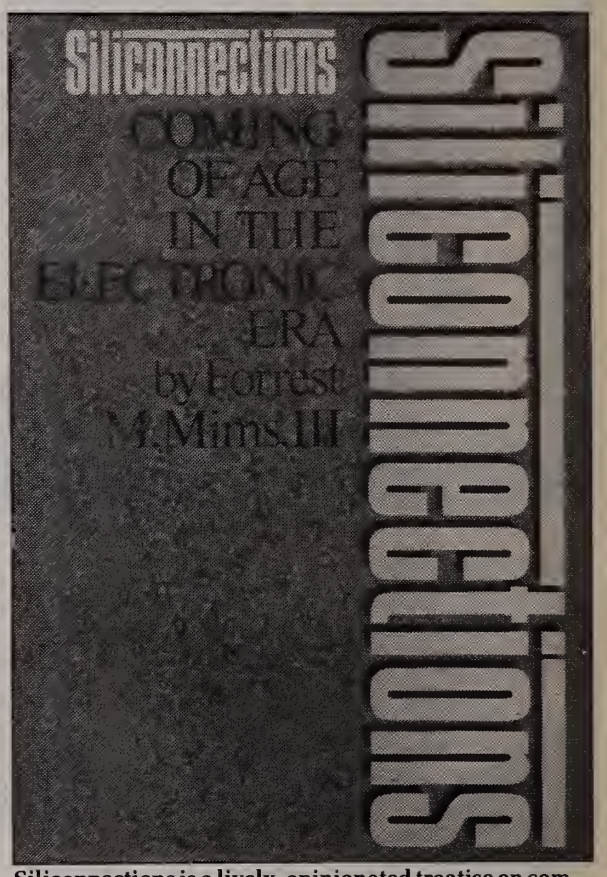
## BOOKS

"My inability to grasp the principles of higher mathematics beyond Ohm's simple law," he says, "didn't squelch my ambition eventually to perform productive work in electronics."

In 1974, along with some of his Air Force buddies in Albuquerque, Mims helped to develop the Altair 8800, a machine that some consider the first "personal computer." It was programmed by flipping toggle switches on the front of the box, and delivered its output through a row of flashing LED's (power users hooked it up to an old teletype machine to have the benefit of a real keyboard). Thousands of Altairs were sold as do-it-yourself kits, following a splashy cover story in the January 1975 issue of *Popular Electronics*. The Intel 8080 microprocessor at its heart cost $360 each (it sells for a few dollars today). The entire kit cost $397. Supposedly, Steve Wozniak developed the original Apple I when, as a member of the Homebrew Computer Club, he couldn't afford an Altair 8800. The Smithsonian Institution acquired Mims' own




**Siliconnections is a lively, opinionated treatise on computer history.**

Altair (still working) in 1984 as an historic relic.

A wonderful chapter describes Mims' experiences at the Air Force Weapons Lab, building experimental kludge circuits from costly Mil-Spec parts: "Every time I soldered a transistor in place I thought how much money could be saved . . . if the Weapons Lab would simply allow Radio Shack to set up a franchise next to the stockroom."

Any book by an inventor needs a story about patent lawyers, and Mims gives an amusing account of his David-and-Goliath battle with Bell Labs over an idea for fiber-optic data transmission. A cloak-and-dagger chapter tells how the *National Enquirer* tried to hire Mims to eavesdrop on Howard Hughes by reflecting a laser beam from his window.

Overall, *Siliconnections* is a rather disjointed, rambling sort of book, but the author is such a good technical writer that he brings it off with dash and flair. He describes himself as a "wires and pliers guy." These are the guys who create technology.

*Siliconnections* was a Science Book Club Selection. There are 12 pages of photographs, and an index. I finished it in two pleasant evenings. Any reader interested in the history of computers is sure to enjoy it.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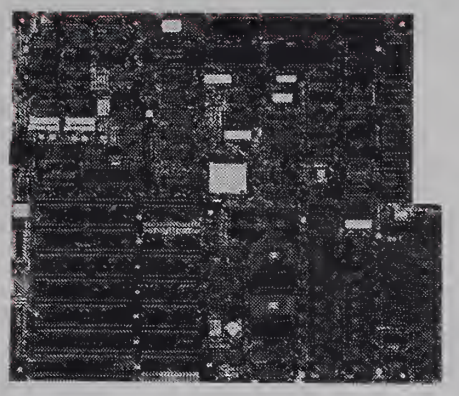

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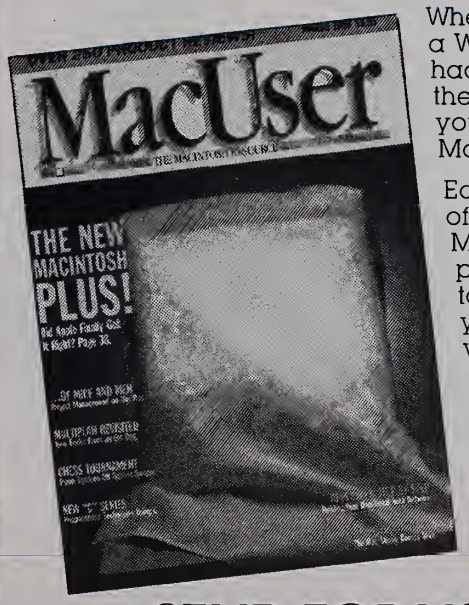


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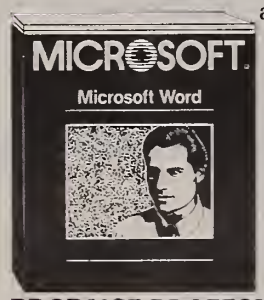


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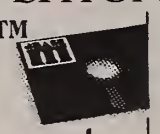

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GAMES

# Eidolon

**Published by:** *Epyx Software*
**Designed by:** *Lucasfilm Games Division*
**For:** *Apple II series, Atari XL/XE, Commodore 64/128*
**Reviewed by:** *Mike Fulton*

While walking past the old Agon mansion one night, you notice the front gate is open. The mansion has been locked up and deserted since Dr. Agon's disappearance long ago, so you decide to investigate. Inside the mansion, you find a secret passage leading down a long, narrow stairway to a room deserted for over a hundred years, Dr. Agon's laboratory! Dr. Agon was a distinguished scientist who studied the powers of the human mind. What experiments did he do in this hidden lab? Among the lab equipment is a mirror, aglow with a pale light, and a strange vehicle with a timepiece frozen at 12:00 in the middle of its control panel. On a nearby desk you find an old diary—Dr. Agon's!

Although it's bad manners, you read Dr. Agon's diary to discover the strange vehicle's purpose. You learn that it's called the Eidolon, an invention of Dr. Agon's to aid his studies into the mysteries of the human mind. The diary details Agon's tests and discoveries with the Eidolon. You decide to try the strange machine yourself...

In the game, you have a driver's eye view from the Eidolon as you explore caverns that open in all directions. You have to gather the three power jewels to get safely past the dragon guarding the entrance to the next level. It's possible to get past the dragon without all three jewels, but it's much more difficult. Each jewel is guarded by one of many different kinds of strange creatures. You must use the Eidolon's fireballs to defeat these creatures and get the jewels. Using fireballs depletes the Eidolon's energy, but it can be replenished from the fireballs to be found throughout the caverns. If you make it to the next level, you will discover new creatures, and a different cavern layout.

In higher levels, the creatures' personalities change somewhat. Creatures that were pushovers before become tough, and vice versa. You have only a limited amount of time to explore the caverns, so time becomes more critical in higher levels. However, you'll sometimes find a blue fireball which suspends time, freezing any creatures you discover and letting you explore without the clock ticking against you.

Success in *The Eidolon* depends on being able to find and obtain the power jewels in minimal time. You must avoid re-exploring parts of the caverns. The caverns can be difficult to remember since one part looks pretty much like another.

Sound effects are a vital part of *The Eidolon*, providing warnings and clues as you explore the caverns and do battle. I was a little disappointed that there wasn't more music during the game. There is a nice opening theme song which plays before starting a game, but during the actual game there is no music; perhaps the programmers were restricted by memory size.

The manual is in the form of Dr. Agon's diary. Careful reading will uncover subtle hints about the game, but a few things are not mentioned. For example, you must leave the disk in the drive during the game because of occasional disk access when changing modes, levels, etc. Also, the copy protection may require you to turn off any additional peripherals before loading the game.

*The Eidolon* is one of the best arcade style games that I've seen for a long time. It is entertaining, and not easily mastered. It will hold your interest for quite a while.

HOME MANAGEMENT

# Quicken

**Published by:** *Intuit*
**For:** *IBM, Apple II*
**Price:** *$99 (IBM), $79 (Apple)*
**Reviewed by:** *Gregory R. Glau*

*Quicken* is a nifty little package that writes your checks and saves their data for you, so it's easy to see where you spent all that money you thought you had. This program's best features may be that you see a check on your screen and simply fill in the blanks—who the check is to, how much it's for, etc. For those bills you (hopefully) pay every month, like your house payment, *Quicken* remembers up to 150 addresses, which cuts down on typing time. It even has help screens keyed to where you're working, although you'll probably never need them.

*Quicken* is available for the Apple ($79) and IBM PC ($99). Both require only a single disk, but two drives make things faster. We looked at the Apple version of the program, which has an interface to the *AppleWorks* spreadsheet. That allows just about any kind of financial analysis of your figures that you'd like.

It's easy to set up a checking account (one per disk). Each data disk can hold about 1000 transactions (2½ years' worth), and you're allowed any number of breakdown categories (taxes, medical expenses, and so on). To tell you how much you spent on an individual category, the program searches the MEMO line on each check, with what amounts to a wildcard search: asking to find all data with TAX as a memo brings up Taxable, taxes, income tax, and so on. If you forget to put something on the MEMO line when you write the check, it won't be included in any category breakdown you request.

We found *Quicken* pretty smart. It puts checks in chronological order; you can quickly enter figures for checks you wrote by hand; and it's truly easy to balance your checkbook.

The package isn't perfect—splitting a payment (so much for interest, so much for principal) is awkward. When you're balancing your checkbook and indicate on-screen that a check show on your current bank statement, you have to wait while the disk whirs. There's no way to send control codes to your printer, to ask, for example, for bold print. And, of course, you still have to come up with the cash to cover the checks you write.

All in all, though, *Quicken* is a helpful program that's easy to use. If you can't find the package at your local store, try your bank—more and more banks are offering *Quicken* to their checking-account customers. (Intuit, 340 University Ave., Palo Alto, CA 94301, [415] 322-0573.)

GRAPHICS SOFTWARE

# Prince

**Designed by:** *Joel Novak, Ken Steiner and Michael Darooge*
**Published by:** *Baudville*
**For:** *Apple II (64K) with printer, color monitor desirable*
**List Price:** *$59.95*
**Reviewed by:** *Mike Markowtiz*

The purpose of *Prince* is to make color prints with your plain old black and white printer. The package includes the program disk, with a library of art and text fonts, four color ribbons (yellow, red, blue and black) and a "craft kit" with a selection of quality papers, envelopes, label stock and a fabric test patch for iron-on transfers. There are two versions of the package: one version has

**The Prince ribbons-and-software package lets owners of black-and-white printers print in color.**

Epson ribbons for the MX-80, RX-80 and FX-80 printers, the other version has ribbon cartridges compatible with the Apple ImageWriter and DMP, the C. Itoh 8510 and the NEC 8023. The program can also be configured to work with "real" color printers, such as the ImageWriter II or the Epson JX-80.

Most popular printer interfaces are supported, including the Apple Super Serial card, the IIc printer port, the Grappler, the PKASO and others.

To make a full-color print, the printer must make a separate pass with each color ribbon. Green (for example) is created by superimposing yellow and blue. Purple is created by mixing red and blue. Blue, yellow and red together make a sort of muddy brown. The *Prince* ribbons use waxy ink that makes a nice iron-on transfer. The program can print any picture in mirror-image reversal so that the iron-on transfer will read properly. The yellow is bright and dense, the blue is a medium navy shade and the red is a rather dull ox-blood color. The black is just black. Detailed instructions for inserting and removing the ribbon cartridges are provided—this is a task most of us only do about once a year, and it can be a little tricky if you are out of practice.

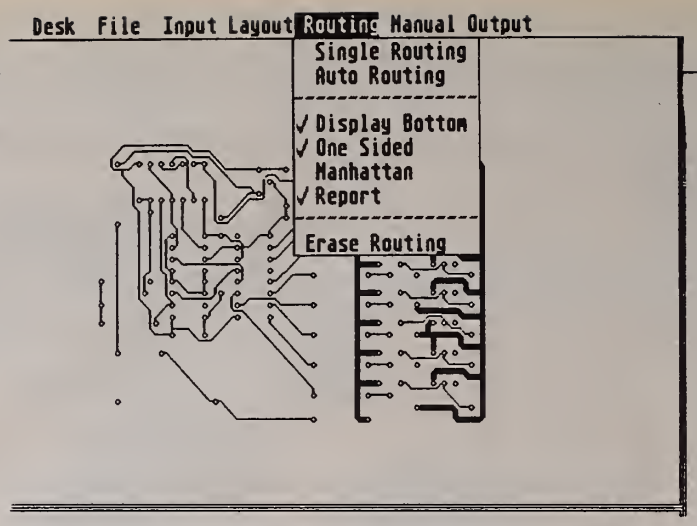
An illustrated 30-page manual describes the many features of the program in detail. Everything is done by selecting options from various menus. Setup is quite simple: you tell the program which computer you have (II+, IIe or IIc), how much memory, what printer and what interface card. After saving your setup, you can put a write-protect tab on the disk. The disk has a handsome gray plastic cover, which stands out in a box of ordinary black disks. The back side of the disk, which contains picture files, is not copy-protected, and can be backed up with any file copy utility. This facilitates using the package on a two-drive system.

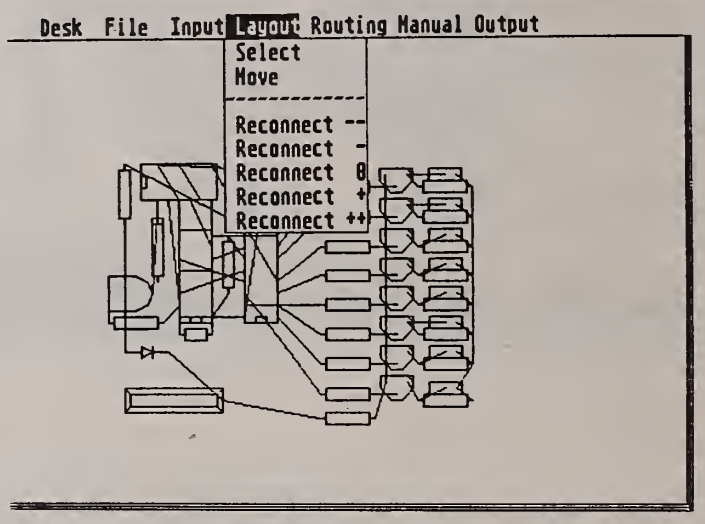
The main options are: print a picture, make an iron-on transfer, print a greeting card (similar to *Print Shop*); and print a label. There is also an "Expert" option, which gives the user precise control over many additional print parameters. For most purposes, however, the default settings work just fine. From within any menu, you can edit a picture by adding text, erasing or cropping the image area, do a printer dump, load or save a picture on a disk, or format a new disk. A picture can be printed in "positive" or "negative" polarity, and in large, medium or small size. Multiple copies can be printed at one time.

*Prince* can edit and print pictures created with a variety of graphics programs, including *Blazing Paddles, Micro Illustrator, Dazzle Draw*, and *Pixit*. Any high-res graphic screen can be captured from another program, as long as you can use Control-Reset to exit from that program before loading *Prince* (some games use copy-protection schemes that defeat this "capture" technique). ProDOS format graphics must first be converted to DOS 3.3 format in order to use them with *Prince*. The program itself does not provide any drawing tools, only symbols, text fonts and borders.

I would not recommend *Prince* for owners of printers without reverse linefeed capability (my Epson MX-80 is an example). It is simply too difficult to get the precise positioning needed for good multicolor printouts when you have to manually roll the paper back after each pass. Even when I made a precise alignment mark on the edge of the paper and pasted a corresponding arrow on the paper feed mechanism, the results were not consistently good. This is easy to understand when you realize that the Epson print mechanism can advance the paper in increments of 1/72 or 1/216 of an inch. If you are off by even one-dot-row, the clarity of your colors can be spoiled.

Color printing with multiple passes is a tedious process at best, and requires that the user be very attentive at each step to avoid getting the colors out of sequence, or messing up the registration. Creative artists who need color printouts, but cannot afford a color printer yet, will find *Prince* to be a useful stopgap at a reasonable price. The program disk (side A) is copy-protected, and a backup disk costs registered users $7.50, including postage and handling.Registered users are also eligible for telephone support, at their own expense for the call. The package contains a reorder blank that makes it easy to obtain fresh supplies of paper, label stock, or ribbons. The ribbon replacements are $12.95 each, for example, and have an estimated effective life of 80 pages or more. (Baudville, 1001 Medical Park Drive, Grand Rapids, MI 49506.)




## Board Design On The Atari ST

*PCBoard Designer* from Abacus Software can save designers time and money by automating printed circuit board layouts. After defining the components and connections, the user can position them on the ST screen and move them around as needed with the mouse. *PCBoard Designer* features an automatic routing capability: traces are automatically drawn onscreen and are easy to redraw if needed. Options allow 45- or 90-degree angle traces, different widths, routing from pin to pin, pin to BUS, BUS to BUS and two-sided boards. For information contact Abacus Software, P.O. Box 7211, Grand Rapids, MI 49510, (616) 241-5510.

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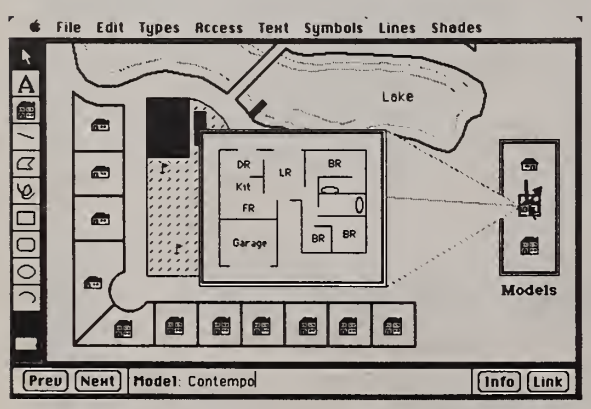
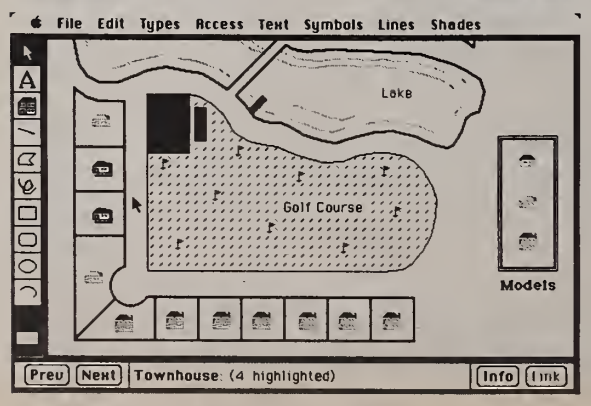
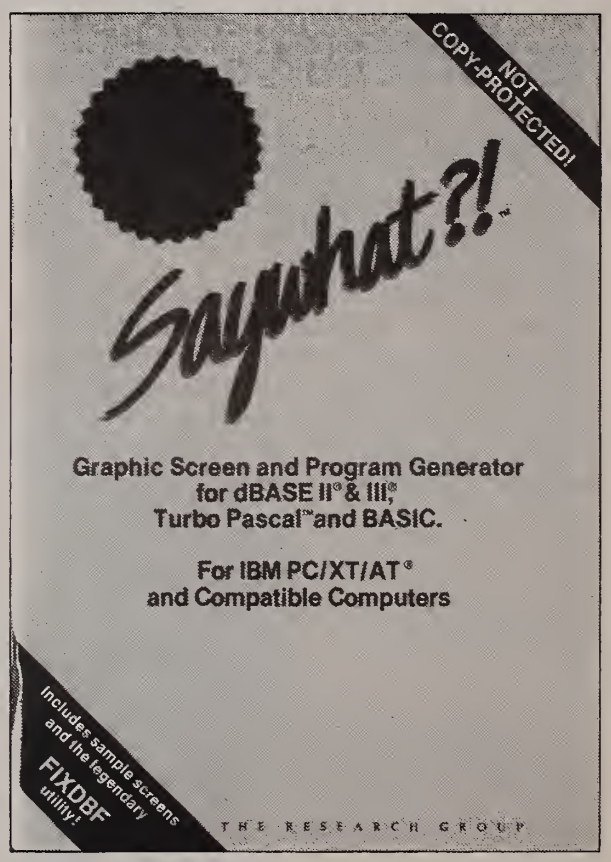
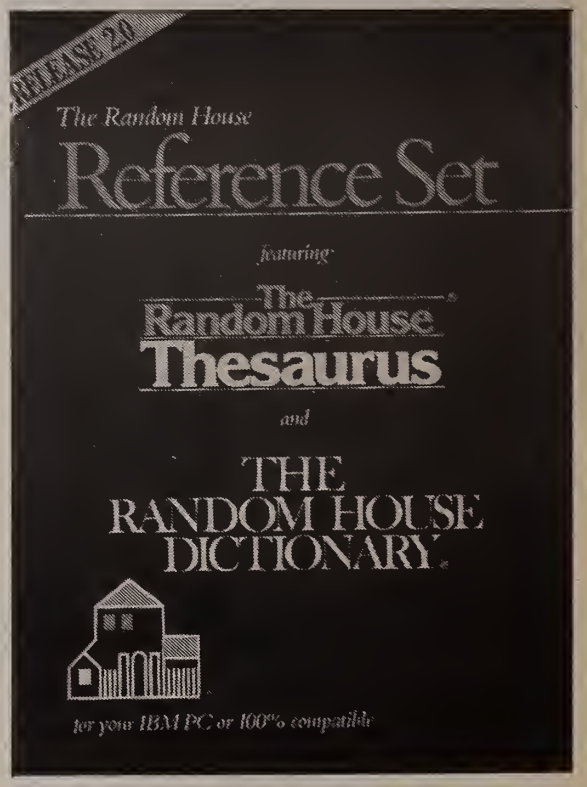



## New Version Of Saywhat?!

Making the programs you create look good is easier with the popular screen and program generator from The Research Group, now available in an improved version. *Saywhat?!* lets you create screens for programs written in *dBase II* and *III*, Turbo Pascal or Basic. It's easy to learn, and a help screen is always available. It offers the ability to create screens with continuous line boxes, special symbols, painted backgrounds and other customizing touches. *Saywhat?!* is not copy-protected and sells for $39.95; it requires an IBM PC/XT/AT or compatible with a least 192K (384K for *dBase III*), DOS 2.0 or above, and a monochrome, color/graphics or Hercules card. Contact The Research Group, 88 South Linden Ave., South San Francisco, CA 94080, (415) 571-5019.

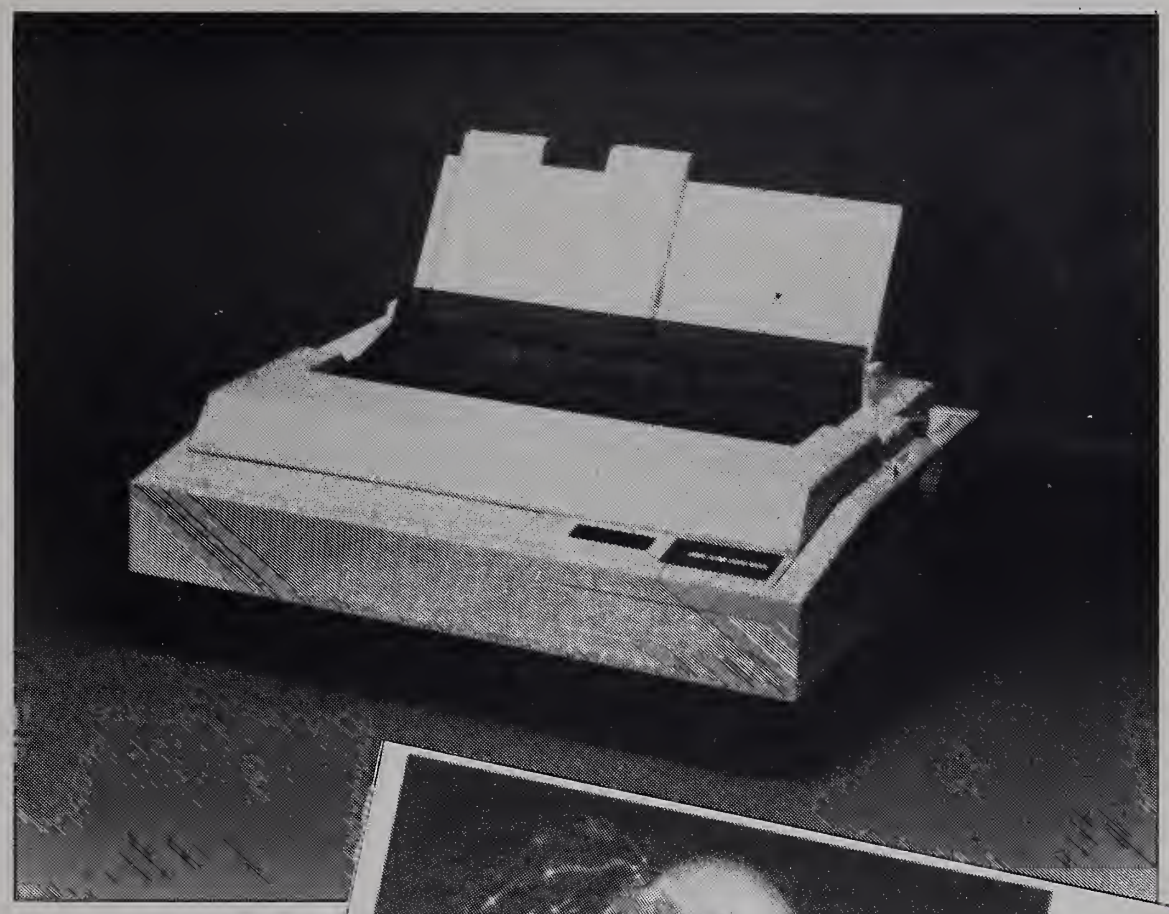


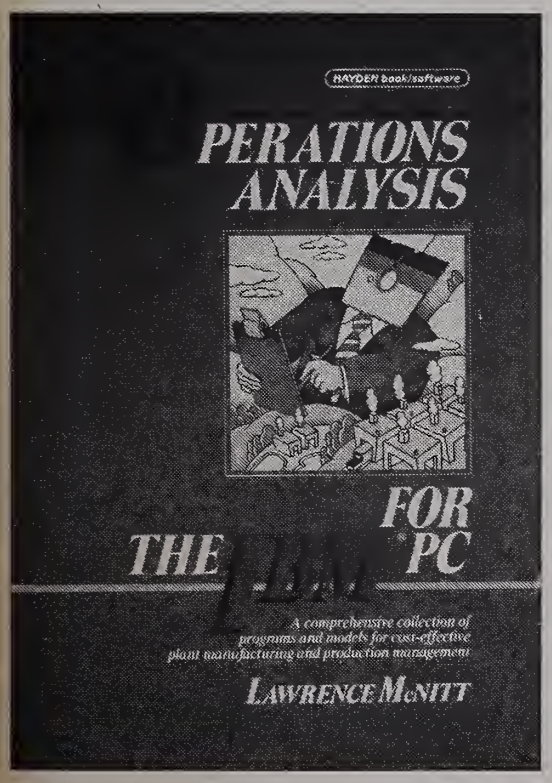

## New Improved Reference

Version 2.0 of the *Random House Reference Set* offers a memory-resident 80,000-word dictionary and 50,000-word thesaurus on non-copy protected disks. It offers instant access to synonyms and correct spellings, and works with such popular word processing programs as *MultiMate*, *Microsoft Word*, *Volkswriter*, *pfs:Write*, *Word Perfect*, *WordStar* and *WordStar 2000*. For a limited time, the *Reference Set* is available for $89.95 ($69.95 for the thesaurus alone). Contact Reference Software, 2363 Boulevard Circle, Suite 8, Walnut Creek, CA 94595 for information or orders.

## New Printer From Fujitsu

The new Fujitsu DL 2400, priced at $1195, is a full-featured, 24-wire letter quality dot matrix printer. It offers a 16-character LCD front panel display to keep the user informed of print status; it also allows full programming of all print functions. It has a low noise level of 55 dBA and prints at speeds of 216 cps in draft mode and 72 cps in letter quality mode. It offers application flexibility with both black-and-white and seven color versions. The printer can accommodate either continuous feed or single-sheet paper, as well as various other formats. For information on this or other Fujitsu printers, contact Cypress Distributing Co., 560 Lincoln Ave., San Jose, CA 95126, (408) 297-9800.

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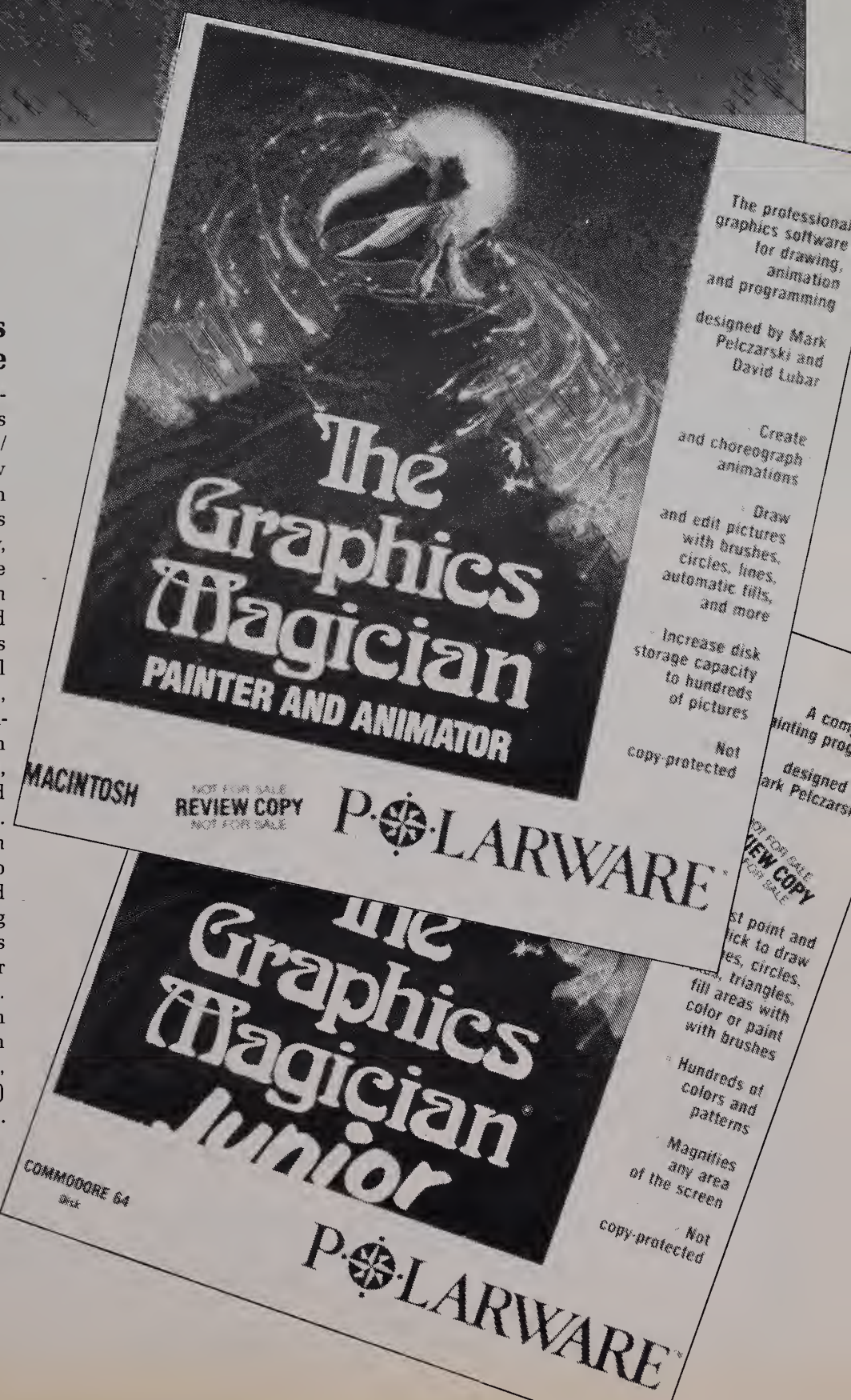
PERATIONS ANALYSIS
FOR PC
THE IBM
A comprehensive collection of programs and models for cost-effective plant manufacturing and production management
LAWRENCE McNITT

## Help For The Business User

*Operations Analysis For The IBM PC* is the latest in a series of book/software packages from Hayden Books. The software features 61 modular programs which offer statistical analysis and planning tools for managers of business and manufacturing operations. The book includes descriptions of how to use the programs for such purposes as cost volume-profit analysis, time and money analysis, facility design, inventory analysis, planning and scheduling. No knowledge of programming is required; running the software requires an IBM PC/XT/AT/jr or compatible with a minimum of 64K, a double-sided disk drive, monitor, and DOS 2.0 or above. Suggested retail is $49.95. Contact the Hayden Book Company, 10 Mulholland Drive, Hasbrouck Heights, NJ 07604, (201) 393-6306.

## New Graphics From Polarware

Expanding on its successful line of graphics software, Polarware/Penguin Software now offers a Macintosh version of *The Graphics Magician* and a new, simpler version, *The Graphics Magician Junior*, for Apple and Commodore. *Graphics Magician* is a professional package for drawing, animation and programming, complete with brushes, circles, lines, automatic fills and hundreds of patterns. *Graphics Magician Junior* is well suited to those who don't need *Magician*'s programming features. Both packages make it easy to store your creations for later use. Polarware/Penguin Software, 830 Fourth Avenue, P.O. Box 311, Geneva, IL 60134, (312) 232-1984.


The professional graphics software for drawing, animation and programming
designed by Mark Pelczarski and David Lubar
Create and choreograph animations
Draw and edit pictures with brushes, circles, lines, automatic fills, and more
Increase disk storage capacity to hundreds of pictures
Not copy-protected
The Graphics Magician
PAINTER AND ANIMATOR
MACINTOSH
NOT FOR SALE
REVIEW COPY
NOT FOR SALE
P·LARWARE
The Graphics Magician Junior
COMMODORE 64
P·LARWARE

# USER GROUP NETWORK

Watched any late-night TV lately? Seen those ads for **Commodore Plus/4** computers? Were you lured by the ludicrously cheap price? Did you buy one, only to find that virtually no software would run on it, and that if you wanted to do something the built-in software hadn't thought of, you were out of luck? Is that what's troubling you, friend?

Well, **Calvin Demmon** of Monterey has good news for you. **PLUG**, the **Plus/4 Users' Group**, is a national organization dedicated to the support of owners of this orphaned machine. Members are scattered across the US, Canada, Mexico and Europe, so meetings are rare (Calvin says that members in the Monterey area often gather informally, though). The group's main activity is publishing a newsletter, in which members pool their informational resources. PLUG also has a small but growing library of public domain software that *will* run on the Plus/4 (which, as many have discovered to their chagrin, Commodore 64 software won't).

Says Calvin, "Hundreds (apparently) of Plus/4s are still being sold every week by liquidators, who advertise them on television and in magazine ads at very low prices. Everyone who buys one is going to find the same thing that we found: getting information about the Plus/4 is difficult. That's what PLUG is for." So if you want to get the most from your bargain computer, contact PLUG at Box 1001, Monterey, CA 93942.

This month we started something new—not only are we putting out the **MicroTimes** you know so well in print, we're also posting selected portions thereof on **The WELL**, and also providing space for readers to respond to the articles, post bulletins of upcoming events, etc. In the few weeks that this has been going on, it seems to be working out quite nicely—the flow of information seems to be improving all around.

You can send us notices of what your group's up to, listings, events, gossip, rumors, etc. You can respond to the articles you've read without having to search for an envelope. You can send us that brilliant idea you had at 3 am when we weren't around to answer the phones. You can ask questions, and if we don't know the answer some other WELL-dweller might. Just consider the possibilities...

You can contact the WELL at (415) 332-3445 (voice) or (415) 332-6106 (modem). Mail should be sent to us at **microx**. You can read the articles by typing **g microx** at the Ok prompt, and then respond in any of various categories. We eagerly await your input.

From this very source comes information on user group doings. **Paul Foraker** reports that the **Santa Cruz Macintosh** user group, a.k.a **maCruzers**, meets on the third Wednesday of the month at Affordable Computer on Front St. He invites like-minded souls to call (408) 458-1644 for more information, or to leave him mail on the WELL (his ID is **sforaker**).

Also from The WELL comes the word on COW—the **Commodore Owners Workshop**. Says **Steve Beale**, the organization's president: "We have a monthly newsletter and a 24-hour BBS. Meetings are free and open to all computer owners, not just Commodore."Meetings are held the third Thursday of the month at 7 pm in the San Bruno Park and Rec building in San Bruno. For more information contact the San Bruno Park and Rec division at (415) 877-8868, or leave mail for **steveb** on The WELL.

Got a nice letter from our old friend **Stefano Minotto**, who, as you may recall, is the president of the **Golden Apple Club** in Padua, Italy. Stefano is still interested in hearing from Apple and Mac groups here, so if your group would like to engage in a little cultural and software exchange, write him at Golden Apple Club, Riviera Tiso da Camposanpiero, 26, Padua, Italy. (If you prefer phone mode, the phone number is 049/30310-662873.)

Quite a few special events coming up this month—the biggie, of course, being the **West Coast Computer Faire** (April 3–6) in San Francisco. The Faire offers its usual lavish array of exhibits and conferences on topics from the practical to the bizarre; **Peter Brown** of the Faire just phoned in with the word that there seems to be a trend for micro-booths to be taken by dealers of exceptionally low-priced software, from so-called bean counters to generic CAD applications.

If desktop publishing is something you'd like to know more about, here's a nice low-cost way to go about it—**MicroTimes** is joining forces with **Golden Gate Shows** to put on **Desktop Publishing Expo '86** at the Hyatt Regency in San Francisco, May 23 and 24. Admission is free. Call (415) 388-8893 for more information.

The **Stanford Macintosh User Group** is hosting this year's **MacFest** on April 15–16 in Tressider Union on the Stanford campus. Contact SMUG for more info at (415) 725-0152 for information.

From the heart of SoCal comes word that the ever-enterprising **Ron Bastone** of a'LA Mac will begin broadcasting **The a'LA Mac Show**, a special interest show for Macintosh users, on Communicom Cable. The show can also be seen on Group W Cable and Valley Cable. The show will feature guests from the world of Macintosh, along with product demonstrations and a character-in-residence called MacSleuth who'll provide tips, shortcuts and problem solving hints. For broadcast information and other relevant data, call Ron at (213) 462-2860, or write to a'LA Mac, P.O. 27429, Los Angeles, CA 90027.

In Santa Cruz, the **Santa Cruz Apple User's Group** meets at Cabrillo College, Aptos, in the ILC building at 1:30 pm, on the second Sunday of the month. This information comes courtesy of president **Tim Ruckle**, who adds that the club has its own section on the **INTERCOM** dateboard (408) 462-5460. For more information, contact Tim at (408) 462-3154.

Here are a couple of updates on past club announcements for the Santa Cruz area. **Sylvia Caras** writes that the **WordPerfect of Santa Cruz** group now meets on third Tuesdays, 7 pm, at 2120 N. Pacific. For info contact Sylvia at (408) 426-7636. And **Marianne Russell** of **CP/MUSC** (the erstwhile Santa Cruz Morrow and Kaypro groups, now joined as CP/M Users of Santa Cruz County) reports that the next meeting will be held on Tuesday, April 8, at 7 pm in the Green Acres School cafeteria, 966 Bostwick Lane, Santa Cruz. She adds the helpful note that the school is strategically located off Paul Minnie Road, and suggests that if you need further directions you should call **Barney Bricmont** at (408) 476-0504.

**Jim Strope** of the **Robotics Society of America** invites inquiries; the organization was founded in 1982 and has headquarters in San Francisco. The Robotics Society has a worldwide membership and is dedicated to disseminating information about robotics, artificial intelligence, and machine control. Says Jim: "We have been meeting in San Francisco for two years, recently started a group in Berkeley and have a design group in Sunnyvale working on a ping-pong playing robot for international competition. Our meetings are open to the public and we welcome participation on our technical and organizational staffs. We are currently looking for a CEO and a secretary for the board of directors." So if this sounds like something you'd like to pursue, give Jim a call at (415) 673-2376, or write to Robotics Society of America, 36 Newell St., San Francisco, CA 94133.

Well, if you're an **Apple II** user who's been just dying to talk to the people who make your software, here's your chance. **Kent Fillmore**, sysop of the **Draconet** and presider-over the **Apple II Roundtable** on **GEnie**, has been up to some interesting things of late. On selected Tuesday evenings, manufacturers of Apple II-related products answer questions in a real-time online conference, with participants from all over the country. Sessions tend to be both lively and informative; guests so far have included **Jef Raskin** of **Information Appliance**, a delegation from **PBI Software**, manufacturers of *Jeeves*, and another contingent from **Pinpoint**. If you'd like more information on these ongoing conferences, contact Kent at (415) 441-0413.

Kent offers a couple of additional **GEnie**-related news items. First of all, you're all invited to stop by the GEnie booth (#1635) at the West Coast Computer Faire and meet the folks. Second, effective through May 31, GEnie is offering a pilot program by which public domain software can be uploaded free of charge during non-prime time hours. If the program proves successful, says general manager **William Louden**, it may become a permanent feature on GEnie. For more information on GEnie, call (800) 638-9636, ext. 221.

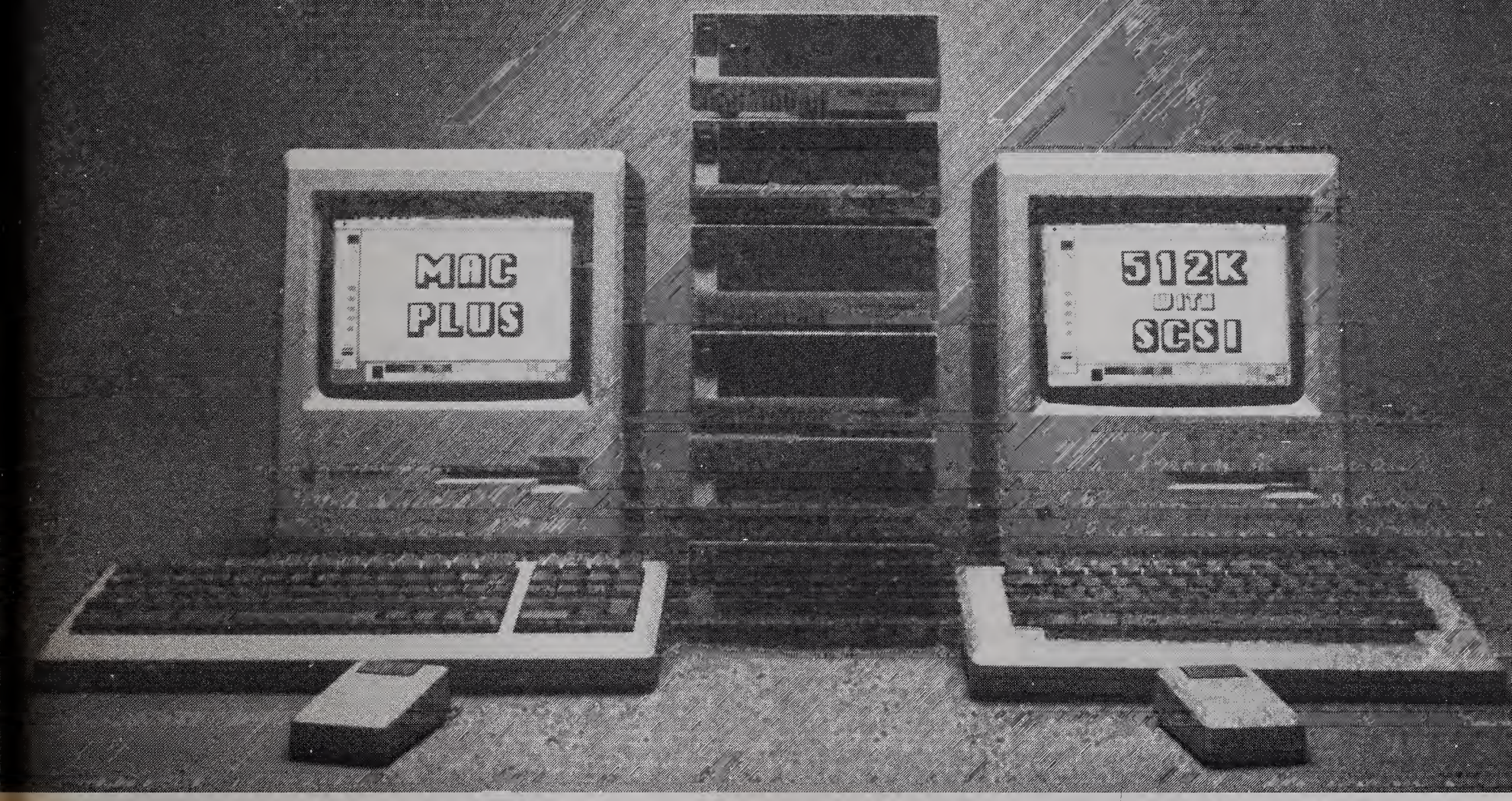
Our old friend **Linda Kahn** of the **FORTH Interest Group** sends along the information that FIG will be out in force at the Computer Faire, with numerous presentations on Sunday April 6, "Programmers' Toolbox Day." Speakers will address present and future applications of the language, and **Martin Tracy** of Forth Inc. will discuss that oft-asked question, "**Why FORTH**?" For information on all this and more, call FIG at (408) 277-0668.

News from the BBS world: the **Atari Base BBS**, (408) 745-5308 or 745-2642, is the official BBS provided by Atari for Atari users. It operates 24 hours a day at 300/1200 baud. **Board III** is, according to sysop **Gregg Hungerford** (a.k.a. "**The Chairman of the Board**"), "an ongoing experiment in telecommunications. Atari-based, but all computers welcome." It operates at (408) 985-7573, 300/1200, 24 hours, 8 bits, no parity. And embattled **Actrix** users may find a valuable resource in the **Actrix Enthusiasts RBBS/RCP/M** board, (415) 968-1783. It operates 24 hours a day at 300/1200 baud, on a 46 megabyte CP/M system. Use of the system is free, but registration is required. Contact sysop **Andy Bujka** at (415) 969-46333 for further information.

Item of interest to software developers in need of legal advice: the **Bay Area Lawyers for the Arts**, a nonprofit organization that's been helping the arts and music community in NoCal for years, is now offering copyright clinics on second and fourth Saturdays of the month. Each session will make a noted copyright attorney available to answer individual questions regarding the proper forms and procedures for registering your product with the US Copyright Office. Cost is $5 for BALA members, $15 for others. BALA is also sponsoring a workshop entitled "Legal Protection for the Software Writer," on Wednesday, May 21, from 7 to 8:30 pm. Cost is $5 for BALA members, $10 for others. Call BALA at (415) 775-7200 for more information.

That's it for now. Keep those cards and letters, electronic and otherwise, rolling in; on The WELL, send mail to **microx**, and send US Mail to 5951 Canning St., Oakland, CA 94609. □

# SCSI
# Hard Disk
# Power By Peripheral Land

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**2) PL30**—A 30 MEG SCSI based hard disk drive for the Macintosh Plus and the Mac 512k. Runs under the new HFS operating system uses plated media technology. Uses the high performance SCSI interface .**1495**

**3) MACSTOR**—A removable hard disk subsystem for the Macintosh Plus and the Mac 512k. Uses the high performance SCSI interface. Uses plated media technology. The removable cartridge provides unlimited capacity while providing data security, supports both HFS and MFS simultaneously. State of the art closed loop servo and microstepping technology . . . . . .**2195**

**4) MACFAST20**—A 20 meg fixed hard disk subsystem for the Macintosh Plus and the Mac 512k. Supports both HFS and MFS simultaneously. Uses the high performance SCSI interface. Each unit comes with a tape drive port so you can easily add a tape back up system . . . . . .**1595**

**5) MACFAST 30**—A 30 meg fixed hard disk subsystem for the Macintosh Plus and the Mac 512k. Supports both HFS and MFS simultaneously. Uses plated media technology. Uses the high performance SCSI interface. Each unit comes with a tape drive port so you can easily add a tape back up system . . . . . .**1895**

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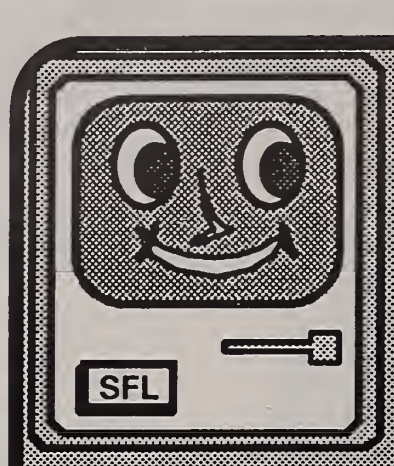


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| Super Mac Data Frame 20 (SCSI) 20 meg hard drive..... | 899.95 |
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| MacFast 20 Meg hard drive (SCSI)..... | 1049.95 |
| MacFast Tape BackUp (SCSI)..... | 1049.95 |
| Paradise Mac-10 Hard Drive..... | 689.95 |
| Paradise Mac-20 Hard Drive..... | 889.95 |
| PeripheralLand 20 meg H.D (SCSI)..... | 919.95 |
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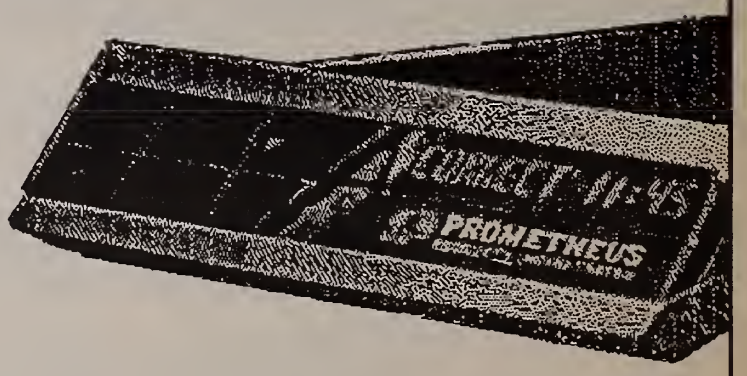


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**Napa Valley RBBS/RCP/M** (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

**Bay Area Atari Users Group** 24 hour BBS (408) 578-2390.

**The Bay PBBS** 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

**TI BBS** 300 baud, 24 hours. All systems welcome. Free. 4 message bases, large data base on various subjects. (415) 994-4877.

**BAKUP (Bay Area Kaypro Users and Programmers)** (415) 223-2237 RBBS & RCP/M — Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

**NCR BBS of Northern California** (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

**MBL Referral System BBS** A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

**Sports** for the serious fan! Latest scores, transactions, injuries and updates, plus the complete betting line for all NFL games, as well as baseball, basketball, hockey, horse racing, and boxing news and results. For personal i.D. and access code and more information, send your name, address and phone number to California Sports Book, 3550 Cattail Court, Union City, CA 94587, or call C/S/B BBS at (415) 471-3591.

**ROOTS—BBS.** Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

**Vortex BBS.** (916) 481-0194. 24 hours, 300 baud. Pamela Lunsford, sysop.

**Bulletin Board** Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

**Welch Net II.** A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 664-2811.

**The Man O'War,** (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

**The General Store Public Domain Programs.** Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

**Fantasy Factory BBS.** Fantasy Factory of Pacifica. IBM and compatibles oriented, but all welcome. 300/1200 baud, 8 bit, no parity, no fees. (415) 355-6047. Sysop Ev Cheney.

**Software First BBS** 24 hrs., 300 baud. (415) 459-1544 Marin, (707) 579-1478 Sonoma. 23 message boards — restaurant, sales, Amiga, ST, women's forum, reviews, sci-fi, general E-Mail, monthly specials on hardware, software, peripherals.

**Bay Connextion BBS** (415) 621-7561, 9pm - 9am. 300/1200 baud at 8/W/I. Macintosh Software, Classifieds, Personals, Sexual Freedom, and Star Trek. Claude Wynne, sysop.

**Silicon Valley Sysop's Exchange.** Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

**Northern California L5 BBS** Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

**The Shark's Head BBS** - Something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user friendly, we're friendly users. Member SVSE. Dusty & Candy Van, (408) 247-4810.

**Oracle BBS** (818) 980-6743, system password MICROTIMES, is a multi-interest, multi-user BBS running 6 phone lines on a CompuPro. Features include 8K messages, comments on messages, match-maker, adult material section, online CHAT between users and much more. 24 hr., 300/1200 baud.

**Earth-Rite RBBS.** We specialize in Earth Religion and related topics. We are not a software exchange. (415) 651-9496. 24 hrs., 300/1200 baud.

**Survival Communication Forum.** The Survival Computer based communication system. Online 24 hours every day. Free access to all. Multiple conferences, private electronic mail, resource listings, file transfer, online survival product catalogs. 300/1200 baud, full duplex. (707) 545-0746. 1435 Sebastopol Rd., Suite 210, Santa Rosa, CA 95407. Don C. Kuhla, Sysop.

**Gamenet** Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

**The Consultant's Exchange BBS** Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

**Thousand Oaks Technical** (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

**Granada Engineering Group RCP/M** (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

**Aware II** (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

**Junkyard Data** (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

**Marina Matchup** (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

**Lynzie's Motherboard** (818) 508-6482/(213) 659-1982. Private E-mail, 21 public boards including Reviews, Employment Opportunities, Dating, Fantasy, Sci-Fi, Current Event Debates, Idea Exchange and Classified Ads. Operates on an IBM XT with 20MB, 24 hrs. 300/1200 baud. We also have monthly social events for all BBS users.

**Bulletin Board System.** BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

**Videodrome BBS.** Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

**HUG1.** The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

**The Agency BBS.** 300 baud. Free. All systems welcome. 16 message bases, large data base of over 100 files on various subjects. Special areas for special interests such as gaming, business programs, and MIDI (Musical Instrument Digital Interface). 24 hours. (818) 794-5001.

**The Wargames RBBS.** Call now for one of the new IBM RBBS around. Features include latest PC News, entertainment news plus special news, report bulletin, messages and downloading. Now 24 hours a day at 300/1200/2400 baud. Sysup: Jason Lin (213) 393-9777.

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**MacQueue BBS** (415) 661-7374. 100% Macintosh BBS with 8+ megs software for download, message base, and FidoNet Mail (Net 125 Node 2). Instant access, 24 hours, 300/1200/2400 baud. See you on the Q!

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**International Collectors Network.** 2265 Westwood Blvd., 801, LA CA 90064, SASE. (213) 204-0646, 8 bit word, no parity, 1 stop bit. 300/1200/2400. 24 hours. Free. Use password "Visitor" when logging on for the first time.

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**Redwood Color Board.** A BBS for the Color Computer user. 300 baud. 7/E/I, 24 hrs., 7 days. (415) 364-2658.

**The Computer Consultant's Network, (213) 479-4074.** Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

**Open Campus BBS** (415) 577-3409. Free, registration required (leave info with first call). 20 message bases and a library of permanent files including programs. Apple based, homebrew software, 5 megs, 300 baud. Operated by San Leandro High School, official BBS for San Leandro Apple Eaters Users Group. Sysop: Bob Shayler.

**Photobytes,** a photography oriented BBS, features product information, help files, photo contest listings, plus much more. Sponsored by Wentling Camera Shops. 300 baud, (415) 439-2515, 24 hrs. 7 days.

**"The Meeting Place" BBS 300/1200/2400 baud.** 24 hours, no parity. AE line for public domain downloads. Apple, Commodore, IBM programs available for download. Numerous general files. No fees — all free. Call (916) 662-1838. Woodland, CA.

**The Castle BBS.** (415) 355-8150, 24 hours. 300-500 baud, 8 bit, 1 stop, no parity. We have 4 message bases, e-mail and UL/DL. CBM oriented but all systems welcome.

**Diai-Your-Match-#1.** The original and still the best on-line matching BBS. Use your modem now and meet your perfect match. (818) 842-6100, 300 baud, 8 data bits, 1 stop bit, no parity.

**Low Overhead BBS.** User-friendly BBS, 24 hours, 7 days a week. IBM software, motorcycles and motorcyclists. (415) 763-6794 or (415) 835-9959.

**Guideboard, Cabbie's Guide to San Francisco** — where to go for restaurants, doctors, auto repair, etc. The sysop gets his tips from driving a cab — the callers furnish the rest. The BBS also has an resident astrologer, Swammi Tommy. The Swami gets his tips from the stars — ask him any question. (415) 864-3858, 300/1200 baud.

**Entrepreneurs BBS:** Official BBS for Community Entrepreneurs Organization (CEO), and XT Compatible Club. 1200/300 baud. 24 hours, 20 megs., 8 bits, no parity. Entrepreneurial networking and information, brainstorming, and on-line support for IBM XT clones. Sysop Edwin Rutsch. (415) 552-9070.

**Kelley-Net BBS.** Bulletin board for all Zenith/Heath personal computer users. Special areas for Zenith Users, Bay Area Minority Business Consortium, Personals, Classified Want Ads, Women's Room, political discussion areas. (415) 861-1874, 24 hrs. 7 days.

**APT Action BBS.** C64 board dedicated to exploring on-line entertainment. Free ACTIONAUT™ software. 24 hours, 300 baud, (415) 322-3213.

**Non-Smokers BBS.** (408) 226-5209, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

**Warren Communications Network.** TI BBS, 24 hours, 300/1200 baud, graphics, speech, downloads. Sysop Douglas Davis. (818) 361-9294.

**Byte Bandits—Colossus—Net.** (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

**Bizcomp BBS.** Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help,

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**Environet.** (714) 731-6439, 300/1200, no parity, 8 bits, 1 stop bit. David Salahi, sysop. The online source of information and contacts for the environmental community. To log on, use user id 105, password PARKS.

**Evergreen PC Users Group (EPUG-1)** (408) 270-4085, San Jose. 8-N-1, 1200/450/300 baud, 24 hours. Sysop Bob Allen. 32 megabytes online, 34+ directories created by Special Interest Users.

**RSVP BBS.** (415) 659-9169, 300/1200, N-8-1. 24 hours. Sysop Jim Thomas AUGment Amiga user Group discussion and file area, Dr. Who forum, Sanyo, IBM, CP/M files, CP/M forum, Ohlone College forum.

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**Marin Community BBS #2** (415) 459-3326. 300/1200 baud, 6 pm - 10 am M-S, all day Sunday. 520 ST/Atari information. Sysop Dave Powers.

**MacCircles EBBS** (415) 484-4412. 24 hours, 300/1200/2400. Running Red Ryder Host software on a Lisa 2/10 (Mac XL). Large software exchange, private mail system, public messaging.

**Musician's Network BBS.** Musician's information exchange. Space for want ads, bulletins, and public mail. Uploading and downloading available. BBS operates on Fido Software. 8 bits, no parity, 1 stop. Sat/Sun 24 hours, Mon-Fri 5 pm - 12 am. (415) 468-6015.

**520 ST Atari BBS** (415) 783-5545, 24 hours, 7 days a week. 300/1200, 8 data bits, 1 stop bit, no parity. Official Sixteen Bit Atari BBS of the San Leandro Computer Club, this system offers full support for all Atari ST system users. Currently running on a ten megabyte hard disk system, the system has many special interest areas including graphics, C, Pascal, LOGO, Basic, MIDI/music, communications and more. Supports four types of XModem/Modem7 and Kermit protocols. Call today! Sysop: Michael Curry.

**Dial-Your-Match #1 BBS** (818) 842-6900. Call the original and most popular dating BBS system. It's free! Dial-Your-Match #1 has been online since October 1981. We've logged hundreds of thousands of calls.

**AutoCAD RBBS** (415) 547-5264. 24 hours, 7 days, 300/1200 baud, 40 megs online. Sysop Robert Schultz. Supporting AutoCAD, the world's most widely used PC based on design/drafting software. There are 4 megs of AutoCAD drawings plus third party public domain programs that work with AutoCAD (i.e. menus, Autolisp and lisp macro libraries) available to download.

**Insight BBS** (415) 229-0551. 300/1200 baud, 24 hours. This BBS is dedicated to personal messages and the friendly exchange of information. Multiple conferences available. Free access to all, and all computers welcome. Runs on IBM XT clone with 20 meg. disk. Carl Orsi, sysop.

**The Precinct BBS** (415) 797-2559. 24 hours, 300 baud, telecat II+. Variety of subboards, private e-mail and online gaming. Sysop: The Sorceress.

**AIDS Information BBS** (415) 626-1246. 24 hours, 300/1200 baud. Sysop Ben Gardiner. Free. All welcome. Statistics from Atlanta and San Francisco displayed, updated regularly as received. Sample Q & A about AIDS, based on clinic and phone exchange experience. Mail send/receive on AIDS; please not on other subjects due to limitation of one phone line. Please also no more than one hour per day. Mobilization Against AIDS information here. Calls to this BBS never disturb anyone.

**Atari Base BBS** (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

**ARBBS (Average Remote Bulletin Board System)** (213) 325-0213. 300/1200 baud, 8 bits, no parity, 2 stop bits, 24 hours. It includes hundreds of files for Polymorphic, text, Basic, TS1000, TS2068, Amiga, Texas Instruments 99/4A, Apple, CP/M, Commodore, Turbo, Atari. It includes a very extensive BBS phone list. Call now. Free. Sysop Tom Delellis.

**Home Board** (408) 294-1454, no fee. A non-profit BBS focused on housing issues in Santa Clara County. 300 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop Ann Dannelly.

**Board III** (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

**Actrix Enthusiasts RBBS/RCP/M** (415) 968-1783. 300/1200 baud, 24 hours, Free. Registration required. 46 megabyte CP/M system. In Mountain View. Sysop: Andy Bajka.

## NATIONAL/ INTERNATIONAL

**Network Users Association.** 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

**TPUG** World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon — Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 1912A Avenue Rd., Suite 1, Toronto, Canada M5M4A1.

**Apple Co-op** 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

**JUG (Jefferson State Computer Users Group).** Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

**MicroPro Users Group of America.** National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

**Franklin Users Group International.** Supporting users of II, II+, Franklins, and all compatibles. We support all members with a monthly newsletter, "The Clone Ace," a growing public domain library and personal attention. Membership $15.00 a year. Contact Douglas M. Trueman, EastWind Apt. L77, Tecumseh, MO 65760.

**68796 Hackers.** 68796 (68000 + IEEE-796) is the only users group supporting hobbyists constructing WICAT 150/Minisystem, Multibus, and 16/32 bit systems. In addition to the 68796 Hacker's Newsletter, we are putting together a disk library. Dues $20/year. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94062. (415) 851-7031.

**Golden Apple Club,** Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, — 35100 Padua, Italy.

**F.O.G.** 15,000 member group supporting all CP/M users. Dues of $24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

**Getec s.r.l.** Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

**Italtel S.p.a.** Contact Michelangello Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

**PLUG (The Plus/4 Users' Group).** Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

## ASSOCIATIONS

**Community Entrepreneurs Organization (CEO)** Business networking group meets around SF area. Invests in new products, markets, brainstorms. Share info. on tech and non-tech business issues. 4 meeting locations, various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael, CA 94912. (415) 435-4461.

**Computer Professionals For Social Responsibility** P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

**Computer Professionals For Social Responsibility (East Bay)** 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

**FOCUS-MED** (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

**FOCUS-DDS** (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

**ITRA** Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. #609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

**MCTUG** (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

**PRACSA (Public Remote Access Computer Standards Association)** offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

**San Bruno Computer Core.** Meets 7:30 pm alternate Wednesdays. Call (415) 952-9309 for address and info.

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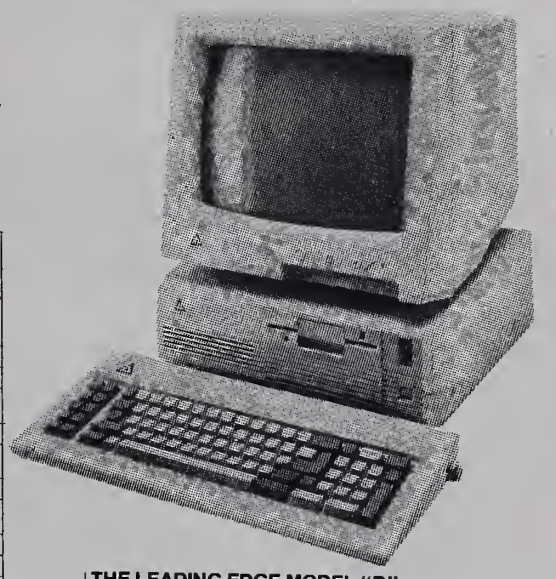

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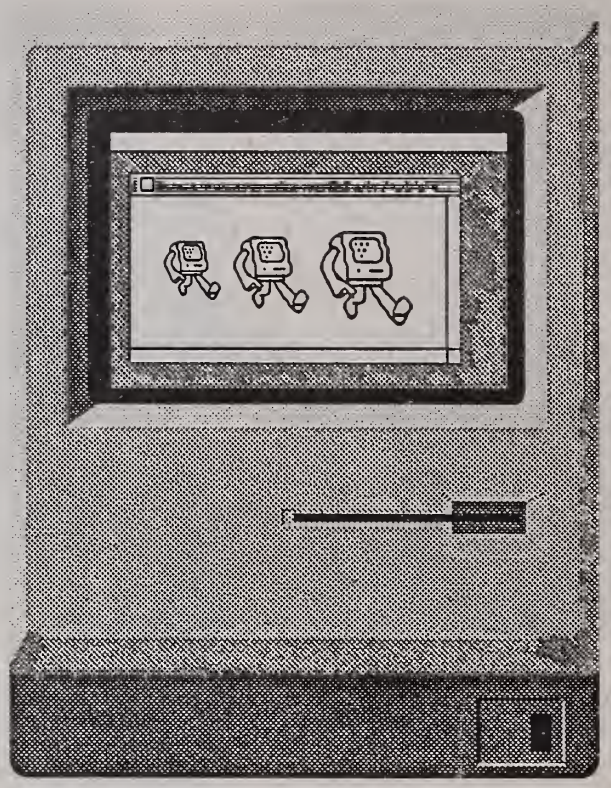

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**San Francisco Computer Society** (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

**Software Entrepreneurs' Forum,** PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

**PATCA** (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

**BAYMUG.** Bay Area MicroProcessor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

**Byte Hum.** A user group for computer buffs concerned with human needs, or social activists who want to learn about computers. Let's put all that knowledge to work for social transformation! Sponsored by the Humanist Party. contact Rick Wall, (415) 495-6555 or (415) 337-2530.

**Society for Technical Communication.** STC is a professional organization dedicated to furthering the art of technical communication. The San Francisco chapter has about 200 members. Writers, artists and others interested in technical communications are welcome. Meetings 3rd Wednesday of every month, 5:30-7:00 pm; call Sarah Collings, (415) 383-9631 for info.

**North Bay Users Group (NBUG).** Family computer club devoted to all aspects of computing. Monthly newsletter, library, software demos, etc. Meetings at "CAVE" school, 2nd Tuesday of the month, 7:30-10 pm. Contact Gloria Hutchinson, P.O. Box 7116, Vallegjo, CA 94590, or call (707) 644-9327.

**Robotics Society of America.** Dedicated to dissseminating information about robotics, artificial intelligence and machine controls. Mailing address 36 Newell St., San Francisco, CA 94133, (415) 673-2376. San Francisco chapter meets 2nd Monday of the month, 8 pm, Homestead Savings 5757 Geary Blvd. Contact Jim Strope, (415) 552-6564. Berkeley branch meets 6:30 pm, last Wednesday of the month, Claremont Branch, Berkeley Library, Ashby and Benvenue. Contact Soren Knudson, (415) 843-2344. Sunnyvale Pongbotics meets in Sunnyvale on the De Anza College campus, Room 22, first three Wednesdays of the month, 7:30 pm. Contact Bill Lee, (408) 281-2252.

## USER GROUPS

### ACTRIX

**ACTRIX Computer Enthuslast Society.** Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

### ADAM

**California's Adam Users' Group.** For a sample issue of the newsletter and a hardware-software catalog free, send your address to CAUG, 1643 Beach St., San Francisco, CA 94123.

### ADAM

**South Bay ADAM Users' Group.** Now forming a users' group exclusively for the ADAM enthusiast in the south bay area. Call Steve for more info at (408) 253-4190.

### AMIGA

**First Amiga User Group.** We offer demonstrations of software and hardware, a public domain library, and general user help at our monthly meetings, which are held on the first Tuesday of each month in Belmont, CA. Meeting address 1300 Fifth Ave., Belmont, CA, 94070, 7 pm, first Tuesday of the month. Contact Tim Avery/Kayvan Pejooh, (415) 595-5452.

**AUGment Amiga User Group** in the South Bay. End-users, enthusiasts, developers and programmers all welcome. Meetings at Glendale Savings, 275 W. Calaveras, Milpitas, 2nd Fridays, 7 pm. Contact Jim Thomas, P.O. 1863, Fremont, CA 94538, (415) 651-0201.

### APPLE

**San Francisco Apple Core** Meets every third Saturday of the month at Fort Mason, Bldg. C, Room 100 at 10 am. New products and innovations are featured for Apple II, Apple III, Macintosh and Lisa. Public domain library, SIGs, tech help, newsletter. $20 per year membership. Info: SF. Apple Core, 1515 Sloat Blvd., Suite 2, San Francisco, CA 94132. (415) 566-2342 (voice), (415) 474-8608 (BBS/modem).

**SPCA (Society For The Prevention of Cruelty To Apples)** Apple user/interest group. Features: Monthly meeting with newsletter, raffle and door prize of hard/software, demonstrations, lectures, discussions. $20 per year, pro-rated after June. Meetings last Wednesday of month, 7:30 pm. Contact Paul Meyerholtz for info (415) 490-8209.

**Association of Apple 32 Users** Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, noncopyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

**San Leandro Apple Eaters Users Group.** Apple II users group meets the first Thursday of each month at San Leandro High School (room 213). New Owners to experienced users welcome: Appleworks, education, hardware/software, telecommunications. Call Open Campus BBS area 11 (415-577-3409) or President Paul Stryker (415-782-9250) for more information.

**Pen-Apple (Peninsula Apple Users Group)** Meetings 2nd Thursday each month at 7:30 pm, Ampex Corporation cafeteria, 401 Broadway, Redwood City. Contact Bob Runyon, (415) 592-1167.

**Diablo Valley Apple Users.** Meets 3rd Friday of each month at EMS, 2371 Stanwell Dr., Concord, at 7 pm. Contact Lynn Hart, P.O. Box 5031, Concord, CA 94524, (415) 798-9281.

**South Peninsula Apple Computer Enthusiasts** (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 — answering machine takes 30-second messages.

**Roseville Apple Core.** Meets 1st and 3rd Tuesday each month at Roseville Public Library. Contact Dave Smart, P.O. Box 1377, Roseville. (916) 961-2249.

### APPLE

**Apple Sac. (Sacramento)** Meetings on first Wednesday and third Tuesday every month at Madison School, 5241 Harrison St. (corner Harrison and Madison Ave.—1/4 mile west of 180 on Madison Ave.), 7:30 pm. Contact Ray Beam, president, P.O. Box 254645, Sacramento, CA 95825, (916) 448-6111 for more information.

**Stanislaus Apple Group.** You're invited! Stanislaus Apple Group meets 2nd Tuesday each month, 7 pm, Room 124 Ag Bldg, Modesto JC, main campus. We support Apple II and compatibles, apple III, Mac, Lisa. Newsletter, BBS (209-529-3202), extensive PD software library. More info call (209) 523-7289 (eves).

**Santa Cruz Apple User's Group** meets at Cabrillo College, Aptos, ILC building, 1:30 pm, second Sunday of the month. For information contact Tim Ruckle, president, (408) 462-3154.

**Apple Gardens.** New Apple II users group. Share info, programs, group purchases. Brand name disk 35¢ each, new products, software demos and evaluations. Call Tom Turley at (415) 468-4045

### ASHTON-TATE

**Framework/Editor Bay Area Users Group (FREDBUG)** Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

**San Francisco dBase User Group** For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

**dBase Users/East Bay** (formerly met in Concord). Meets 3rd Sunday, 1 pm, 2415 Grant St., Berkeley. For more information contact Cynthia Kolnick, (415) 235-7317 or Darrell Bross (415) 586-5788.

**dBase II/III SIG** of SF PC Users Group meets third Monday of each month, 7-8 pm, Fort Mason, San Francisco. Contact Ron Freshman, (415) 459-6613.

**DBDVLPRS (dBaseIII Program Developers).** Call for information on meeting time and location: Gil Orlik, (415) 931-0377, 2240 Buchanan St., SF 94115.

**Framework SIG of SF PC Users Group.** Users of all levels, programmers, developers. Meetings at Fort Mason Center, San Francisco, 3rd Monday of each month. 7-8 pm. Contact Tom Reichert, (415) 391-4687.

**Framework Users Group of San Francisco Bay Area.** Meets at 2 pm on the Second Sunday of each month. Meeting location may vary for the convenience of members. For information call (415) 521-4643.

### ATARI

**ABACUS (Atari Bay Area Computer Users Society)** All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

**A.C.M.E. (Atari Computer — Marin Enthusiasts)** Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

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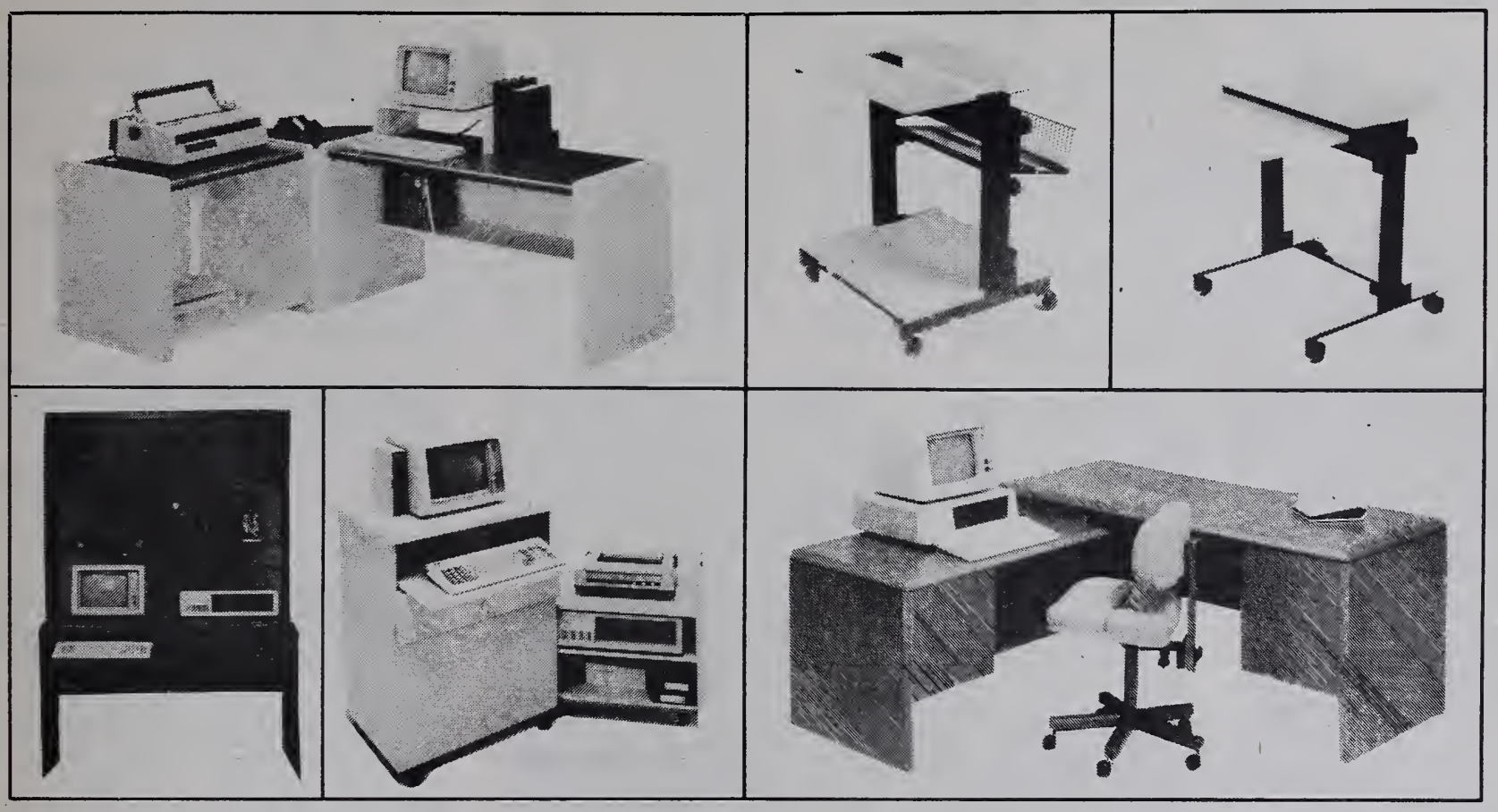

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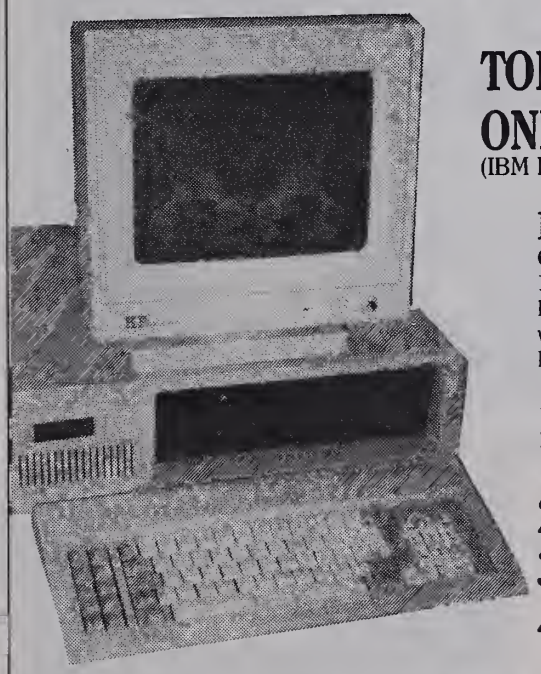

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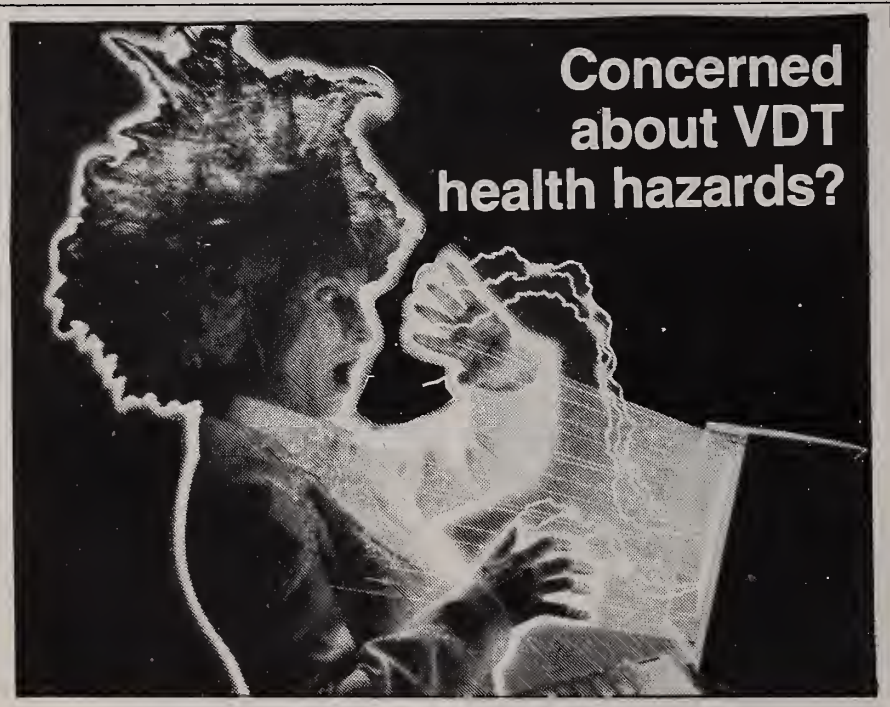


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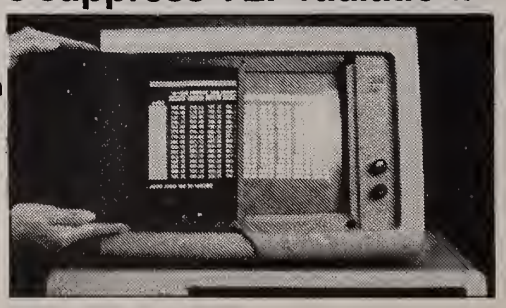

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## ATARI

**Diablo Valley Atari Computer Enthusiasts (D.A.C.E.)** Contact Mike Randis, 3602 Dumbarton St., Concord, CA 94519, (415) 798-6565.

**Bay Area Atari Users Group** We have a 24-hour BBS at (408) 578-2390. Meetings at Santa Teresa Library, 290 International Circle, San Jose, (408) 281-1978, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 940-1323 for more info.

**San Leandro Computer Club** Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

**COAST User Group (California Original Atari ST).** Public domain disks, MIDI, support, help for the Atari ST line of computers. Advice and programs not to miss. Meetings at 477 15th St, Oakland, CA, 3rd Wednesday each month, 7-10 pm. Contact Chuck Thorp (415) 945-1949 or Bill Beckerman (415) 658-8865 for information.

## ATTACHE

**Attache UNL** Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

## BASIS

**Bay BUG** Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

## CANNON

**Cannon AS 100.** Anyone who owns a Cannon AS-100 computer and is interested in forming a group to share problems and solutions write HTF-4111 Hilltop, Vacaville,CA 95688.

## CASIO

**Casio Research Project.** Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

## COMMOOORE

**San Francisco Commodore Users Group** Public domain library, classes, tech help, in depth demonstrations, monthly newsletters, Epromer, savings on purchases, all this and more. BBS # (415) 626-6330, (415) 268-3769 300 baud. Meeting address 256 Laguna Honda Blvd., San Francisco, 3rd Tuesday of the month, 7:30 pm. Contact Roger Tierce, 278 27th Ave. # 103, SF, CA 94121, (415) 387-0225.

**20/64 Computer User Group — San Jose Chapter** meets the first Sunday of each month at Mercury Savings and Loan, 859 Blossom Hill Road (corner of Blossom Hill and Pearl), San Jose, from 6 to 9 pm. For further information call (408) 733-2637 or write to P.O. Box 18788, San Jose 95158.

**20/64 Computer User Group — San Jose North Valley** Chapter meets the second Saturday of each month at the Milpitas Library, 40 North Milpitas Boulevard, Milpitas, from 10 am to noon. For further information call (408) 733-2637.

**20/64 Computer User Group — Cupertino Chapter** meets the second Sunday of each month at the Cupertino Public Library, 10200 Torre Avenue, Cupertino, from 6 to 9 pm. For further information call (408) 733-2637.

## COMMOOORE

**20/64 Computer User Group — Campbell Chapter** meets the fourth Tuesday of each month at the Campbell Public Library, 70 North Central Avenue, Campbell, from 6:30 to 9:30 pm. For further information call (408) 733-2637.

**Diablo Valley Commodore Users Group** Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

**Napa Valley Commodore Computer Club** Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

**Lake County Commodore Users Group** Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

**Marin Commodore Club** Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

**PUG of the Silicon Valley** Commodore 64 (PETs, 8032s, 2001s also). Friendly computer group established back in 1977 with a very extensive disk library. No dues, donations only. Bring your machines to the meeting or use club dual disk drive to copy programs. Meets at cafeteria, Ford Aerospace Bldg. #3, 3939 Fabian Way, Palo Alto, CA 94303, 1st Wednesdays of the month, 7-10 pm. Contact Marvin Vander Kooi, (408) 446-1936.

**PenInsula Commodore User Group** Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

**The Commodore Connection.** Newsletter, BBS, public domain disks, dealer support and more. Approved member of Commodore World. Call (415) 458-3318 8 am - 8 pm or 8 pm - 8 am for the BBS. Meetings 1st and 3rd Mondays, Neighborhood Center, Civic Ave., Pittsburg, CA, 7:30 pm.

**Commodore User's Group of Hayward.** The CUG of Hayward meets the first Saturday of each month from 3 to 5 pm at the Commodore Computer Center located at 22521 2nd St., Hayward. Call (415) 886-1916 evenings between 5 - 8 pm or (415) 537-1323 days bvetween 10 am and 5 pm.

**NBUG (North Bay Users Group).** Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

**Santa Rosa Commodore Users Group.** Walter Saures, President, 333 East Robles Ave., Santa Rosa, CA 95407-7921. (707) 584-7009. Information line, (707) 526-6464 — SR-CUG-BBS.

**Root Searchers-64.** Commodore, Dynax, WordPro 3 Plus, and Practi-Calc II users in Richmond area, let us unite to solve problems which makers ignore. Family research emphasis. Meeting time and place to be decided by respondents. Contact Vera Ross, (415) 235-8716.

**PLUG (The Plus/4 Users' Group).** Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

## COMPAQ

**SF Compaq Users Group** is now a SIG of the SF IBM PC Users Group. For information please call D. Blow at (415) 221-2764.

## COMPUPRO

**Bout Time, By God** CompuPro user group forming in San Francisco. Call (415) 665-4733 or write to Barry Hermanson, 1509 5th Ave., San Francisco, CA 94122 for information.

## CROMEMCO

**Silicon Valley Cromemco Users** Meets 3rd Tuesday of the month at MCM Enterprises. 215 Hamilton Avenue, Palo Alto, CA. Call Emily Ott at (415) 854-5818 for details.

## DATAFLEX

**Dataflex User Group.** For more information call Alex at (415) 433-7944.

## DYNABYTE

**Dynabyte** Announcing M.A.D., Mutual Assistance, Dynabyters (Dinosaurians?) For owners of this orphan Z80 S100 machine. Call Woody McPheeters, (415) 548-3126 or write 3128 King St., Berkeley, CA 94703.

## EAGLE

**Eagle Computer Users Group.** P.O. Box 3381, Saratoga, CA 95070, (408) 973-1254. General meetings are held every 4th Monday at the Mercury Savings and Loan, Blossom Hill Road and Pearl Ave., 7-9 pm.

**Screaming Eagles User Group** for 8 bit CP/M machines. Quarterly newsletter, public domain disk. Meet on CompuServe (PCS 54). $10/year individual, $20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

## ENABLE

**ENABLE Users' Group.** Supporting users of Enable, the integrated software system. Monthly meetings and newsletters. Registration and year's dues: $25.00. Loaner copy available for trial. Meetings at Fort Mason Center, SF. Time and date vary—write for sample newsletter, or call: Lion Goodman, 38 Glen Dr., Mill Valley, CA 94941, (415) 381-3300.

## EPSON

**Bay Area Epson Salts — Epson** 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

**Epson Users of San Francisco** Bay Area Epson group has nationally circulated newsletter *Valnews*: 400 members — mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

**Napa Valley Epson Users Group** 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

**Epson Users Group of Sacramento.** The only user group for QX-10/16 owners east of Bay Area/Napa. Actively seeking new members. Please get in touch with us. Meetings 1st Tuesdays, 5026 Don Julio Blvd., North Highlands. Contact Terry Sandbek, 4095 Bridge St., Fair Oaks, (916) 965-4606 or 966-5730.

## FORTH

**FORTH Interest Group, Berkeley Chapter.** Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

**FORTH Interest Group, Monterey/Salinas Chapter.** Contact Bud Devins, (408) 633-3253.

**FORTH Interest Group, Sacramento Chapter.** Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

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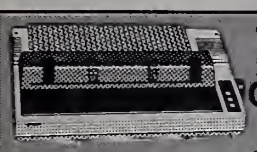

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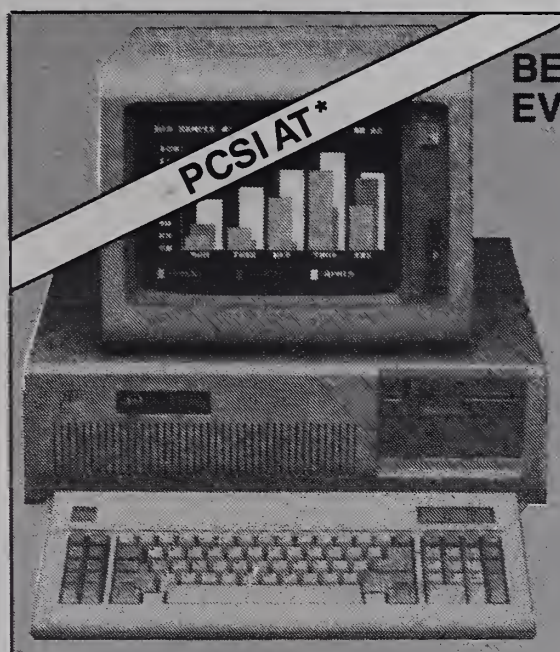

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## FORTH

**FORTH Interest Group, Bay Area Chapter.** Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

**FORTH Interest Group,** Stockton chapter. Contact Doug Dillon (209) 931-2448.

## GAVILAN

**Gavilan User Group.** Monthly meeting at Bldg. 160, Lockheed, Sunnyvale, 2nd Thurs., 7 pm. Contact R.W. Brown at (408) 379-2774 Gavilan BBS (408) 374-3974 SIG S.V.C.S.

## HEATHKIT

**San Jose Heathkit Users Group.** Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

**B.A.H.U.G.** Heath/Zenith computers, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 2nd Thursday. Contact John Lindquist, 642 Hollenbeck Ave. #1, Sunnyvale, CA 94087.

## IBM

**South County PC Users Group** Meetings held second Thursday of each month, at Software Center, 22406 Foothill Blvd., Hayward, CA. Public Domain club disks, newsletter and help on MS-DOS problems. Contact Debra Taylor, P.O. Box 7656, Fremont CA 94537-7656 for more info, or call (415) 276-5111.

**SVCS (Silicon Valley Computer Society).** IBM users group. Meets second Wednesday at 7 pm at the Westinghouse auditorium located on the corner of Duane and Britton Aves., in Sunnyvale.

**California PC LAN Users Group,** 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

**Diablo Valley PC.** An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Jim McDonnel, president, 2261 North Main St., #117, Walnut Creek, CA 94596, (415) 933-1270.

**XT Compatible Club SF.** For all IBM XT "clones" such as homemades, no-names, Nova, Magnum, etc. Meetings 1st and 3rd Monday, Lincoln University (Masonic & Turk), in 3rd floor library, 7 pm. Call Edwin Rutsch (415) 552-8648. BBS (415) 552-9070.

**The Bay Area Computer Society** Emphasis on IBM PCs, networking and multi-user systems. P.O. Box 20583, Oakland, CA 94604, (415) 839-5786.

**IBM PC Users Group of the Redwoods.** Anyone interested in PCs and/or compatibles is welcome. Meetings at Yulupa School, 2250 Mesquite Dr., Santa Rosa, CA, 4th Thursday of the month, 7 pm. Contact Michael Adams, P.O. Box 5055, Santa Rosa, CA 95402, (707) 664-8320, (707) 546-3619.

**Sacramento PC Users Group.** Meets at 1701 C St., Sacramento, 7 pm, 3rd Wednesday of the month. Contact Barney McCauley, P.O. Box 685, Citrus Heights, CA 95610, (916) 484-1048.

**SF PC jr User Group** meets monthly. Lectures and discussions on the usage of IBM PC jr software and hardware. Software and books library. For more information please send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114. Meetings at 1550 Bay St., SF, every first Sunday at 7:30 pm.

**San Francisco PC Users Group.** Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $30 yr. Write 3145 Geary Box 155, San Francisco, CA 94118. Meetings 8 pm, 3rd Mondays, Bldg A Fort Mason.

## KAYPRO

**BAKUP (Bay Area Kaypro Users and Programmers).** One of largest Kaypro user groups in country. Meets 3rd Tuesday of month, 7:30 pm. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join: Membership Coordinator, P.O. Box 20181, Oakland, CA 94620.

**KAYFUN Peninsula Kaypro Users Group** meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership $12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

**South Bay Kaypro Users Group (SBKUG).** Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

**HAYPROS.** Kaypro User's Group - informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

**CP MUSC, CP/M Users of Santa Cruz County** (formerly SCMDUG and SCKUG). Open to all users of Morrow, Kaypro, Osborne, Televideo and other CP/M computers. Write to 376 Lucinda St., Scotts Valley, CA 95066 or call Barney Bricmont at (408) 476-0505.

## MACINTOSH

**EBMUG (East Bay Macintosh User's Group)** Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler, (415) 621-8808.

**Bay Area MacForum** New and experienced Macintosh users. 2 monthly meetings: one immediately following San Francisco Apple Core meeting at Fort Mason, Building C, Room 300, San Francisco, 3rd Saturday of the month; one at Software Center, The Willows Shopping Center in Concord, second Monday of the month, 7 pm - 9 pm. For info: 1515 Sloat Blvd. # 2, San Francisco, CA 94132, (415) 566-2342

**Berkeley Macintosh User Group (BMUG).** 1442A Walnut St., #153, Berkeley, CA 94709. Free meetings on campus (UCB). General meetings: every Thursday 7-9 pm, Physical Sciences Lecture Hall. Beginners: 6 pm Tuesdays, 230 Wheeler. Developers: 6 pm Wednesdays, 30 Wheeler. Call the office for this week's topic. Reese Jones, (415) 849-9114. BBS (415) 849-BMUG.

**MacNexus.** Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 163058, Sacramento, CA 95816, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

## MACINTOSH

**MacProgram Unlimited.** Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

**Stanford Macintosh Users Group (SMUG)** meets on the first Monday of the month at 7 pm in Kresge Auditorium, Stanford Campus. Meetings include speakers, disucssions, answers and sale of library disks and other SMUG items. The Developer's SIG meets every other Thursday of the month starting January 16 in 111 Polya Hall at 7:30 pm. SMUG also publishes a newsletter and runs a BBOARD system, and will be holding MacFest in the Tressider Union, Stanford campus, April 15-16. For further information, call the SMUG hotline at (415) 725-0152, or write to SMUG, P.O. Box 6508, Stanford, CA 94305.

**SHOWPAGE,** the San Francisco Bay Area MUG. Speakers and product demonstrations. Monthly 25-30 page newsletter. Discussion, discounts, public domain & demo program library, and more. Recently under new management. Meets second Tuesday of each month at Fort Mason, Bldg., C, Room 300 at 7:30. For further info call (415) 621-8808 or write 2040 Polk St., Box 340, San Francisco 94109.

**Club Mac of Monterey.** Macintosh User Group of Monterey Bay Area. Membership with monthly newsletter $25. Meetings 7 pm, last Wednesday of the month, Santa Catalina School, Monterey. Contact Richard Ware, P.O. Box 222988, Carmel, CA 93922.

**Macs of Marin.** Macintosh users of Marin County. Large public domain library. User exchange of tech and info. Emphasis on education of Mac users. Meetings Room 104, Science Bldg., College of Marin, 2nd Tuesday of the month, 7:30 pm.

**maCruzers,** a Macintosh user's group, meets every third Wednesday of the month at Affordable Computer on Front St. in Santa Cruz, 7 pm. For information call (408) 459-1644, or leave mail on The WELL (415-332-6106) for Paul Foraker <sforaker>

## MICROMATE

**MicroMate.** East Bay MicroMate Users' Group. CP/M (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miler, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

## MINDSET

**First Mindset Users Group** Monthly meetings and newsletters cover advanced topics in computer graphics, animation, and video production using the Mindset Personal Computer and accessories. Meetings at various Bay Area locations, 3rd Monday of the month, 7 p.m. Contact Tim Negris, 138 Village Ct. #6, Walnut Creek, CA 94596, or call (415) 934-1448.

## MORROW

**BAMDUA (Bay Area Micro Decision Users Association).** Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

**SMUG (Stanford Morrow Users Group).** Meets 2nd Wednesday of each month at 8 pm on Stanford campus, Polya Hall, Room 111. For further information call Ross E. Voyles, (408) 243-1455.

**CP MUSC, CP/M Users of Santa Cruz County** (formerly SCMDUG and SCKUG). Open to all users of Morrow, Kaypro, Osborne, Televideo and other CP/M computers. Write to 376 Lucinda St., Scotts Valley, CA 95066 or call Barney Bricmont at (408) 476-0505.

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### OSBORNE

**East Bay FOG (First Osborne Group)** Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

**SMOG3 Osborne User Group (Peninsula)** Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

**MTDOG (Mt. Diablo Chapter—First Osborne Group)** Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software/hardware/service demonstrations, sharing problems and solutions. For meeting info contact Sylvia Tobias, (415) 376-4720.

**North Bay First Osborne Group.** Meets first Thursday of the month at 7:30 pm, Valley Oaks Apts. Rec. Hall, 2600 Northcoast St., Santa Rosa, CA (off West Steele Lane). Call (707) 546-0145 for more information.

### PICONET

**Piconet CP/M Users Group.** Meets second Thursday at 7 pm at the Stanford Linear Accelerator Auditorium, Palo Alto. The password at the gate is "Piconet Meeting."

### PIED PIPER

**Pied Piper Users Group** Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

### R2E

**North Bay R2E** Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

### RADIO SHACK/TRS

**Byte Bandits of America.** TRS-80s Computer Club. Meetings: bi-monthly. 2nd Sat., 1 pm, workshop. 4th Wed., 6 pm., formal meeting. Club membership required. Contact Robert W. Brown, 780 Manx Ave., Campbell, CA 95008, (408) 379-2774.

**TRS-80 Computer Society of Diablo Valley** The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

**TRS Nybblers.** Since 1979. New MS-DOS SIG, 3rd Fri. ea. mo., Room 1500; CP/M SIG 1st Fri. ea. mo. BBS (415) 582-8442—24 hrs. DSDD disks, boxed, $14.00. Meetings at Chabot College, Hayward, 2nd Friday, 8 pm. Contact B.B. Jarvis, 1975 Paseo Del Cajon, Pleasanton, CA 94566. (415) 582-8442.

**Bay Area Chapter of the California Computer Federation,** a user group for Color Computer users formed by The Redwood Color Board. First meeting mid-January. Write the R.C.B., P.O. Box 7007, Redwood City, CA 94063 for details.

**South Bay TRS 80 Users Group (SBUG).** For info write P.O. Box 60116, Sunnyvale, CA 94088 or call Don Rhodes at (408) 996-1008. BBS: (408) 253-6293. Meetings, Cupertino library, 3rd Tues., 7:15 pm.

**San Mateo TRS-80 Users Group.** Meets 4th Thursday of the month at Cal Fed S&L, 2600 Ocean Ave., SF., 7:30 pm. BBS (415) 574-7684, 300/1200, 8-N-1 settings. Contact Julian Kaufman, (415) 992-1783.

### ROYAL

**Royal Alphatronic,** San Francisco. New group forming. Call Tom Rutkowski at (415) 863-4794 for information or write P.O. Box 421161, San Francisco, CA 94142.

### SANYO

**Sanyo User Group of the San Francisco Bay Area** meets the second Wednesday of each month at Sears Savings & Loan in the Carlmont Shopping Center (Alameda & Ralston), Belmont, 8-10 pm. National group dedicated to the Sanyo 8 bit CP/M machines: MBC 1000, 1100/1150, 1200/1250 series. For info write SFBASUG, 1260 Westwood St., Redwood City, CA 94061. Include SASE with 39 ¢ postage for newsletter.

**Sanyo MBC 1100-1150** user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

**Sanyo National Users Group.** SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact Ken Taylor, 4008 Pasadena Dr., San Mateo, CA 94403. (415) 345-7781.

**Santa Clara Sanyo Users Group.** SCSUG's 24 hour BBS (415) 659-9169. Support for MBC-55X Systems. Meetings at 1 West Campbell Ave. #80, Campbell, 7-10 pm every 3rd Wednesday of the month. Contact Jim Thomas, (415) 651-0201 for info.

**Sanyo PC Compatible Club.** SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate $20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

### SOUTHERN PACIFIC

**ICOLATUG.** User group for owners of Southern Pacific Ltd's Mountainside ICO and LAT single board computers. Exchange tips and programs. Contact Andrew P. Porter, 774 Joyce St., Livermore, CA 94550.

### TEXAS INSTRUMENTS

**San Francisco 99ers** One General Meeting per month plus uncountable mini-meetings for training. Over 500 programs available in library. Meetings second Tuesday of the month, 6:30 pm. Texas Instruments Learning Center, SF. Contact Dick Altman, 1053 Shrader St., San Francisco. (415) 661-1994.

**South Bay T.I. User Group.** One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, Cupertino Library, 10400 Torre Ave., Cupertino, (between DeAnza Blvd. and Rodriques Ave.) starting at 7 pm in the basement conference room. Call v.p. Keith Felix, (408) 258-6678.

**Nor-Cal TI 99/4A Users Group.** Learn more about your Texas Instruments 99/4A computer. Free software, sources ofr hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

### TIMEX/SINCLAIR

**East Bay Timex/Sinclair User Group (EBZUG)** Timex/Sinclair user group. S/W library and newsletter. Meets at West Branch of Berkeley Public Library at corner of University and San Pablo. Meets 3rd Tuesday of the month at 7:30 pm. Contact Rick Link. 654 40th St., Richmond, CA 94805. (415) 234-3310.

**Peninsula Timex/Sinclair User Group (PUG)** Timex/Sinclair user group. S/W library and newsletter. Meets at Peninsula Hospital, 1783 El Camino, Burlingame. Meets 3rd Sunday of the month at 1 pm. Contact George Mockridge, 263 Gateway #107, Pacifica, CA 94044. (415) 359-3198.

**Silicon Valley Timex/Sinclair User Group (SVTSUG)** Timex/Sinclair user group: 6675 Clifford Drive, Cupertino, CA 95014-4530. Bill Miller (408) 253-3175. SW library and newsletter. Meets at Cupertino Library, 10400 Torre Ave., Cupertino, CA, last Tuesday of the month.

### UNIX

**The Unix C-Club** Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

### VECTOR

**Bay Area Vector Group** Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

### VICTOR

**Victor* Group** is the San Francisco Bay Area Victor User's Group. We have three chapters — East Bay, South Bay, and San Francisco. Members can attend meetings at any of the chapters or all of them. The more the merrier. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. South Bay meetings are held the first Thursday of each month at Computer Insights, 40957 Grimmer Blvd., Fremont at 7:30 pm. Contact John Kimber (415) 797-6423. East Bay meetings are held the second Wednesday of the month at 7:30 pm; contact Boardman Moore (415) 283-3285 for location and further info. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact Joe Zmuda, (415) 584-4048.

### VTC-1050

**VTC-1050 User's Group.** Establishing a VTC-1050 User's group and newsletter. Interested parties please call or write Ken Phillips, 4349 Blackford Ave #1, San Jose, CA 95129, (408) 973-1353.

### WORD PERFECT

**Word Perfect of Santa Cruz.** Meets third Tuesdays, 7 pm, 2120 N. Pacific. Contact Sylvia Caras, (408) 426-7636.

### ZENITH

**Zenith User Group of San Francisco.** Zenith users are forming a user group and bulletin board for Zenith computers. Hands on demonstrations will be provided on the full line of Zenith hardware. Meetings at 1325 Howard St., SF, CA. Contact Stan Kelley, 415-861-3068.

**B.A.H.U.G.** Health/Zenith computers, CP/M, MS-DOS (300/1200 baud BBS 415-365-7836). Meetings 2001 Middlefield Rd., Redwood City, CA, 7 pm second Thursday. Contact John Lindquist, 642 Hollenbeck Ave., #1, Sunnyvale, CA 94087.

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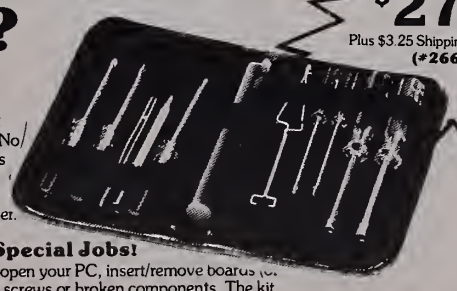

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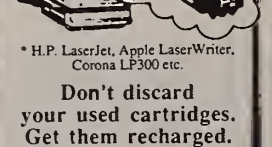

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# What's In The Stars? Ask Turbo Astrale

*Turbo Astrale™ is an astrological forecast program designed for computer users. The readings generated by Turbo Astrale's high level Artificial Intelligence Application Language are interpreted here by the program's creator, Dr. Guenther Reinhardt.*

## April 1986

**Aries** (3/21–4/19) Computer users born under this sign are the true hackers of the electronic universe. Your daring makes you dissatisfied with specifications supplied by manufacturers or instructions from those in authority. Mind your quick temper through the 20th, after which your curious nature will smooth out your impatience and contempt for the world of lesser engineers. Some famous Aries: Wilbur Wright, Nikita S. Khruschchev, Data General Corporation, and Doug Carlston.

**Taurus** (4/20–5/20) Taureans tend to be Republican, and they usually have the best and most powerful computer systems, even though they are not normally "power users." That would be too much effort. Until the full moon, guard against your false sense of noblesse oblige. Be careful while the Sun is in Pisces; avoid entangling relationships at this time. Do not freely promise assistance or pirated software to friends until later in the month. Famous Taureans: Guglielmo Marconi, Henry J. Kaiser, the Timex Sinclair, George Stibitz, the Z80 Chip, and Bill Hewlett.

---

*Dr. Reinhardt, the developer of* Turbo Astrale™, *is Director of the Foundation for Computer Assisted Somatic and Psychic Experimental Research (CASPER), based in Boston, MA. Messages for Dr. Reinhardt can be placed electronically on The Well (415-332-6106) at the "microx" address. For a confidential personal reading by Dr. Reinhardt, send your name, the exact time, date, and place of birth, and $50 (certified check, money order, or Visa/MC card # with expiration date only, no C.O.D.) to: TurboAstrale™ c/o MicroTimes, 5951 Canning Street, Oakland, CA 94609.*

**Gemini** (5/21–6/20) Although highly intelligent, Geminis have severe problems figuring out how to use integrated software packages like *Symphony* or *Jazz*. Normally tough-skinned and talkative, you are particularly sensitive when your friends accuse you of being "two-faced." Don't worry. It's not true. You're just cheap. Some notable Geminis: John Paul Sartre, Judy Garland, The Source, Sidekick, and Gary Carlston.

**Cancer** (6/21–7/22) Cancers are helpful and hardworking, but dumb. Every office has them—the dummy who, two years ago, claimed to know all about *dBASE III*, and still gets stuck every time a new employee has a problem with their database; to say nothing of Senior Programmers and chronic spreadsheet users. Cancer men are consistent underachievers. You do, however, find solace in working with numbers. And you could have a great evening with you-know-who on the 26th. If you assert yourself. Some famous Cancers are Isaac Watts, Konrad Zuse, Jay Forrester, Alan Turing.

**Leo** (7/23–8/22) Most Leos, if they are not murdered first, grow up to be presidents of high tech firms. Leos really don't believe the myth that they are born leaders. The truth is, you really just like to say no. Even though you carefully cultivate a "son of a bitch" image, and your employees hate you, you really do feel the pain when you lay off 33% of your staff. This contradiction in your personality will assert itself early in the month. You fear that you employees will discover that you're really a wimp. You like to play with your kid's Commodore 64. Napoleon Bonaparte, Benito Mussolini, the IBM PC, Jerry Pournelle, and David Bunnell are all famous Leos.

**Virgo** (8/23–9/22) Most corporate Data Base Managers are Virgos. This stands to reason, because you love obscure detail. Your zeal for order leads you to dream about quitting your job to start a mail order firm that will market yet another line of smoked plastic disk organizers. The middle of April will be the most dangerous period. Your job and health could suffer if you don't control your hunger to discover the hidden source code in *VP Planner*. Several Virgos of note: Pierre Curie, Cornelius Vanderbilt, the TRS-80, and Dennis Brothers.

**Libra** (9/23–10/22) Many entrepreneurs in Silicon Valley are Libras who've always wanted to rock & roll. You are bright, intuitive and, therefore, at the forefront of niche marketing. You show great poise when negotiating deals; in fact, a Libra invented the term "Net Never." On the down side, people will accuse you of being evasive and touchy when you don't follow through. This is because you have a short attention span and daydream quite a bit. You are the first to bail out of any project facing Chapter 11, accepting a life of bouncing around all the Valley start-ups, until, through sheer dumb luck, you'll cop a gig as a roadie for the Grateful Dead. Some famous Libras: Groucho Marx, Donn Parker, and James Martin

**Scorpio** (10/23–11/21) Scorpios can be shrewd, fierce, vengeful, sarcastic, bullheaded, and manipulative. You can also exhibit enough jealousy, envy, and determination to stomp your opponents into the ground. Any Scorpio who can point all of that in the right direction and shoot will go far in any facet of the computer industry. You adore recreational activities, but no one wants to play with you for fear of having a racquetball shoved down their throat. Consequently, those Scorpios who can't pull it together become avid Zork players, or bulletin board junkies, as the only means to vent their anti-social traits. Famous Scorpios: Martin Luther, Billy Graham, Gerald Weinberg, Bill Gates, and Mitch Kapor.

**Sagittarius** (11/22–12/21) Sagittarians are independent, and may possess clarity, wit, and an unstable home life. You are practical and hardworking, but have a hard time dealing with reality. This lack of consistency leads you to be ardent about an issue one moment and indifferent the next. Very few Sagittarians ever overcome these fluctuating emotions, and thus most of them are inclined to make errors in judgment. For these reasons many Sagittarians become writers for *InfoWorld*. Several Sagittarians: Jonathan Swift, Mark Twain, Walt Disney, Jack Backus (author of FORTRAN), Gene Amdahl.

**Capricorn** (12/22–1/19) Many Capricorns have the reputation of being "slick operators" who exploit people and circumstances mercilessly. The fact is, you have no feelings to begin with and are an exhausting slave driver. Your unerring eye for practical applications is at the bottom of your reserved and cautious demeanor. You tend to calculate every move in secrecy, because if you fail, you become a well of self pity. You dislike impulsive people and become annoyed if things don't work right. Many of the rumors in the computer industry are started by Capricorns. Noteworthy Capricorns: J. Edgar Hoover, Richard Nixon, the HP 85, Trip Hawkins.

**Aquarius** (1/20–2/18) Aquarians are the comic heroes of the zodiac. Like Don Quixote, you tend to unceasingly tilt at the windmills in your own mind, and naively assume that everyone understands, or even cares, what you are talking about. Aquarians, like Geminis, tend to be mental dilettantes. You dabble in obscure concepts and consistently stumble when you must bring your ideas down to earth. Some famous Aquarians are Apple's Macintosh, Hewlett-Packard, Borland's SuperKey, and Adam Osborne.

**Pisces** (2/19–3/20) Pisces, the most sensitive water sign, must overcome innate bashfulness to be charming. A deep-rooted fear of loneliness makes you seek out companionship on CompuServe. Unusually jealous, you want to be completely, wholly, and entirely loved. When frustrated in this regard, you can fire off vicious bursts, aimed straight at the jugular of the unfaithful. Your paranoid imagination and ear for inflection enable you to read whatever you want into other people's statements. Because your sign is ruled by Neptune and Jupiter, your transition into other careers like psychiatry, faith healing, or art is a comforting possibility to you. Examples of Pisces: Albert Einstein, Elizabeth Taylor, Kenneth Olson (DEC), Vannevar Bush, and Philippe Kahn. □

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